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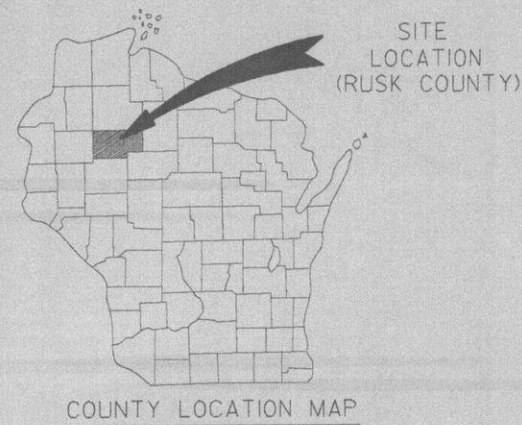
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FLAMBEAU MINING COMPANY FLAMBEAU PROJECT

MINING PLAN / PERMIT APPLICATIONS

LADYSMITH, WISCONSIN



PREPARED BY:

FOTH & VAN DYKE
GEOSCIENCES & ENVIRONMENTAL
MANAGEMENT DIVISION
GREEN BAY, WISCONSIN

FORD, BACON & DAVIS UTAH, INC.
SALT LAKE CITY, UTAH

PINCOCK, ALLEN & HOLT, INC.
LAKEWOOD, COLORADO

PREPARED FOR:

FLAMBEAU MINING COMPANY
10 EAST SOUTH TEMPLE
P.O. BOX 11248
SALT LAKE CITY, UTAH 84147

FIGURE NO. 1	GENERAL LOCATION MAP
FIGURE NO. 2	REGIONAL GEOLOGIC MAP
FIGURE NO. 3	REGIONAL SITE ANALYSIS MAP
FIGURE NO. 4	REGIONAL SITE ANALYSIS MAP
FIGURE NO. 5	REGIONAL SITE ANALYSIS MAP
FIGURE NO. 6	REGIONAL SITE ANALYSIS MAP
FIGURE NO. 7	REGIONAL SITE ANALYSIS MAP
FIGURE NO. 8	REGIONAL SITE ANALYSIS MAP
FIGURE NO. 9	REGIONAL SITE ANALYSIS MAP
FIGURE NO. 10	REGIONAL SITE ANALYSIS MAP
FIGURE NO. 11	REGIONAL SITE ANALYSIS MAP
FIGURE NO. 12	REGIONAL SITE ANALYSIS MAP
FIGURE NO. 13	REGIONAL SITE ANALYSIS MAP
FIGURE NO. 14	REGIONAL SITE ANALYSIS MAP
FIGURE NO. 15	REGIONAL SITE ANALYSIS MAP
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FIGURE NO. 97	REGIONAL SITE ANALYSIS MAP
FIGURE NO. 98	REGIONAL SITE ANALYSIS MAP
FIGURE NO. 99	REGIONAL SITE ANALYSIS MAP
FIGURE NO. 100	REGIONAL SITE ANALYSIS MAP

NOTES: THE FULL SCALE DRAWINGS (SEE LIST) HAVE BEEN REVIEWED TO 1/4" = 1 MILE IN THE MINING PLAN OR PERMIT APPLICATIONS AND PART OF THE DRAWING SET.

ENGINEERING CONTRIBUTION BY FORD, BACON & DAVIS UTAH, INC. AND ASSOCIATES TO BE PREPARED UNDER THE DIRECT SUPERVISION OF:

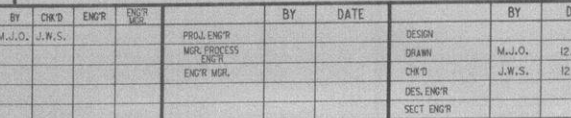
Engineering Contribution by Ford, Bacon & Davis Utah, Inc. Prepared under the direct supervision of:

12-23-79

25860

DATE 1/5/79 DRAWING NO. 1

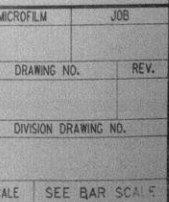
FOTH & VAN DYKE
GEOSCIENCES & ENVIRONMENTAL MANAGEMENT DIVISION
GREEN BAY, WISCONSIN



A horizontal graphic scale bar with alternating black and white segments. It is labeled with '0' at the left end, '300'' at the midpoint, and '600'' at the right end. Below the bar, the word 'SCALE' is centered.

[illegible]

45000 E

[illegible]



Jord, Bacon & Davis, Incorporated
ENGINEERS-CONSTRUCTORS
SALT LAKE CITY, UTAH



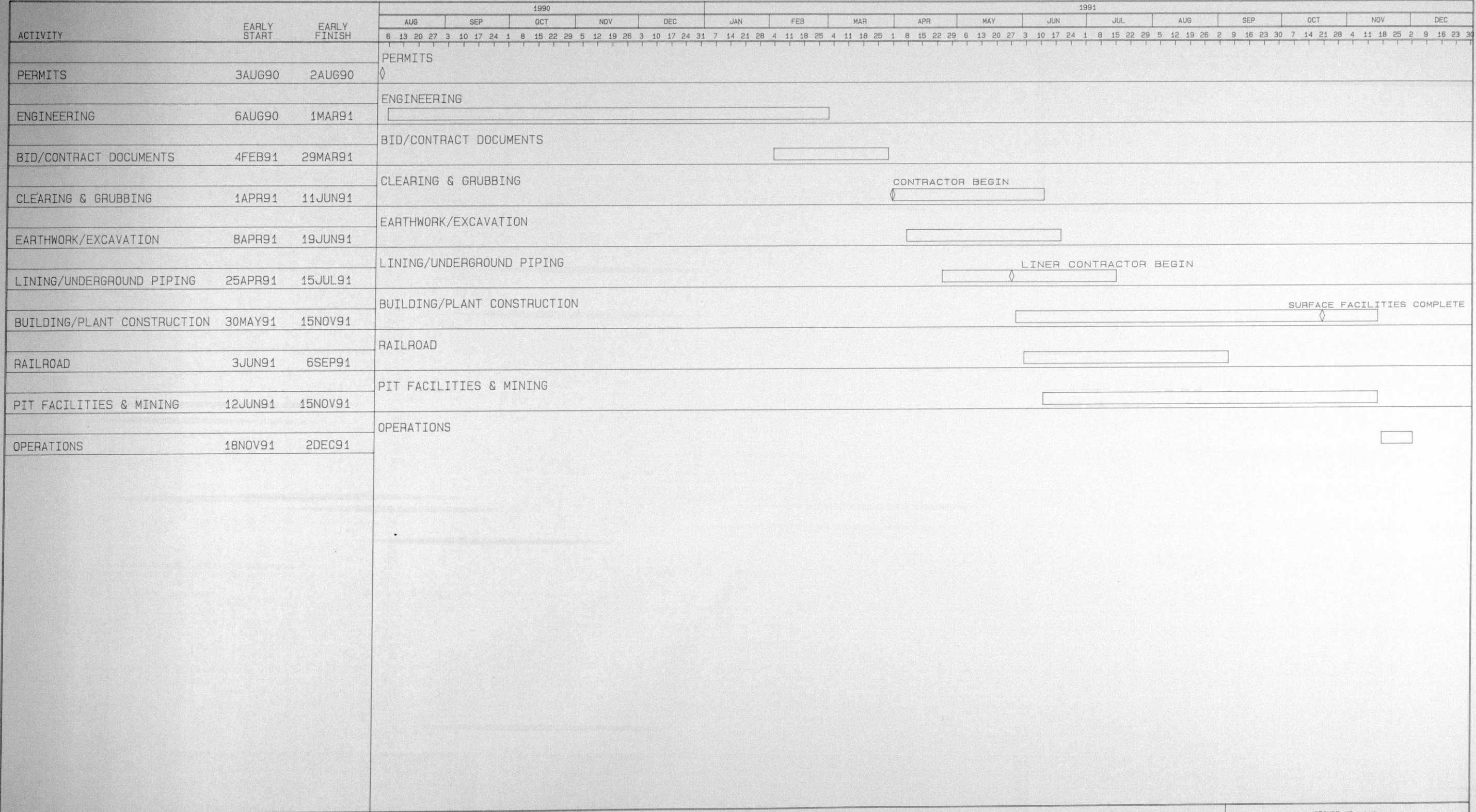
FLAMBEAU PROJECT
LADYSMITH, WISCONSIN

KENNECOTT MINERALS COMPANY
1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

FIGURE NO. 4-1
SITE PLOT PLAN
END OF MINING

MICROFILM	JOB
	M6033R
DRAWING NO.	REV.
FM000-01-007	5
DIVISION DRAWING NO.	
OWNER OPERATED	
SCALE	1" = 200'

REV.	DWG. NO.	DESCRIPTION	REV.	DWG. NO.	DESCRIPTION	BY	DATE	REVISIONS	BY	CHK'D	ENGR	ENGR	NO	DATE	REVISIONS	BY	CHK'D	ENGR	ENGR
													1	2/22/89	GENERAL REVISIONS	PSH			
													2	3/6/89	GENERAL REVISIONS	PSH			
													3	3/21/89	GENERAL REVISIONS	PSH			
													4	10/21/89	REVISED TOPSOIL STOCKPILE	GNW			
													5	12/12/89	RELOCATED PARKING LOT	GNW			



[] Summary Bar/ Early Dates
[] Critical Designator
[] Progress Bar

Project Start : 1MAR89
Project Finish: 2DEC91

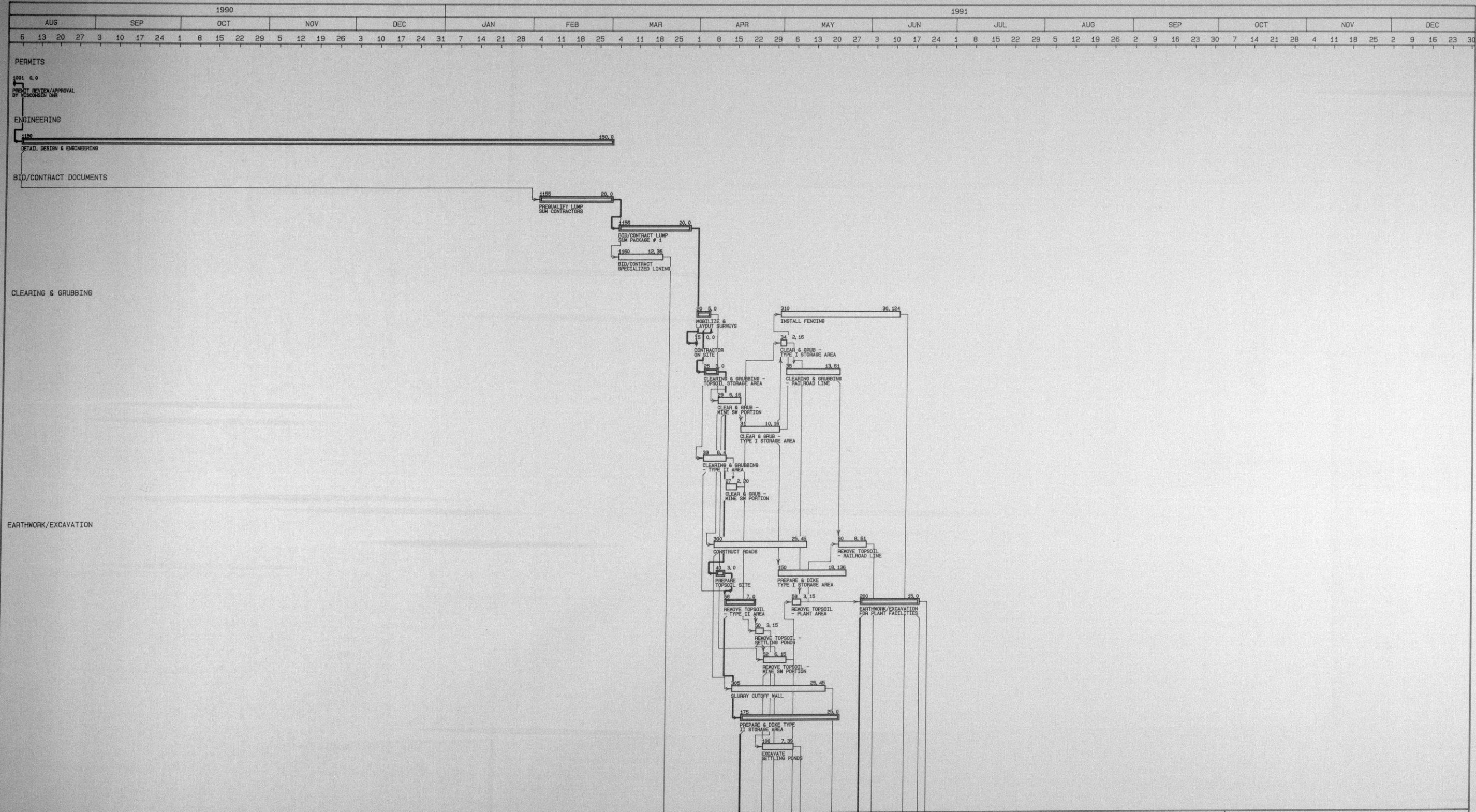
KENNECOTT MINERALS COMPANY
FLAMBEAU PROJECT
CONSTRUCTION SCHEDULE

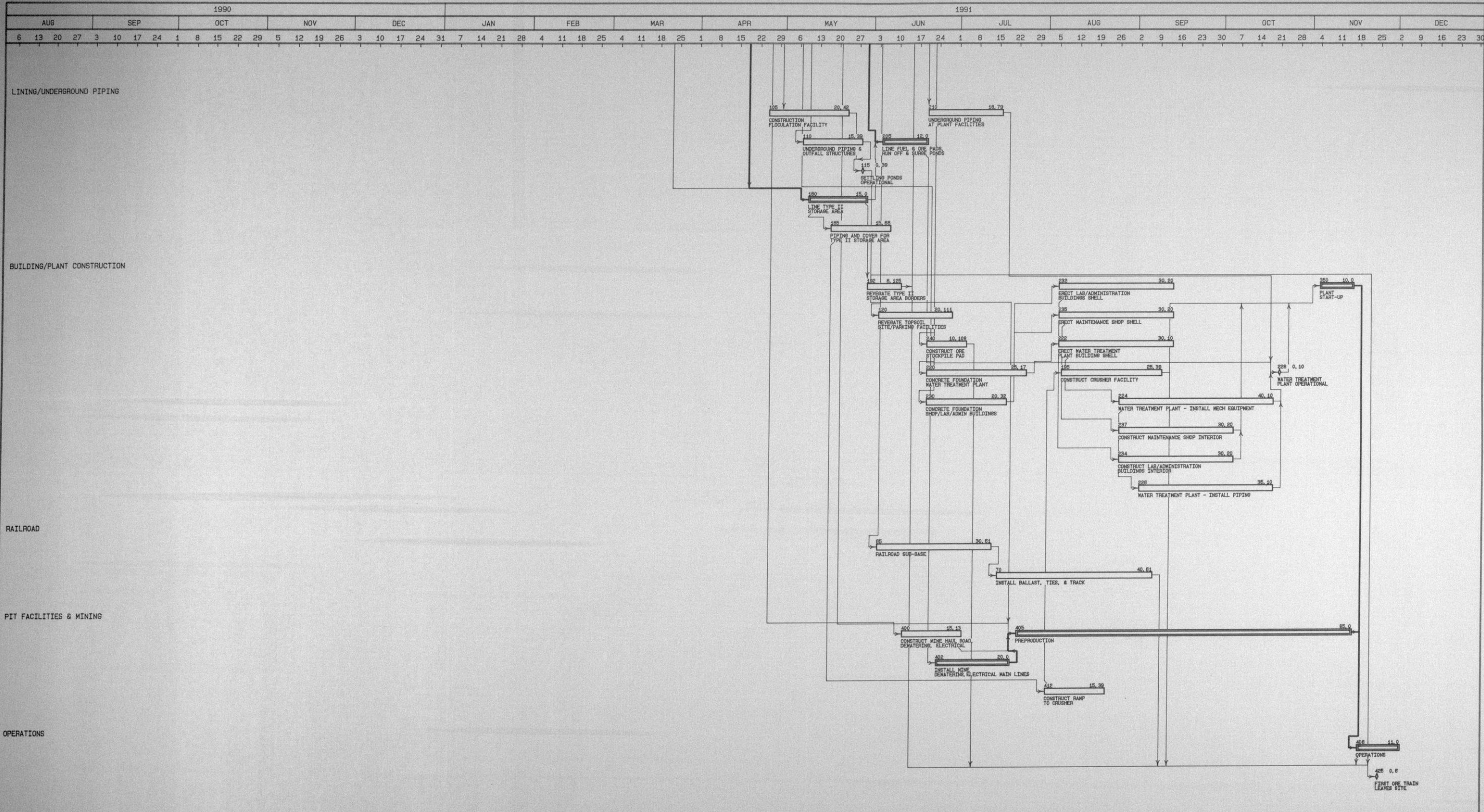
Sheet 1 of 1

Data Date: 1AUG90
Plot Date: 27DEC89

FIGURE NO. 4-4

Date	Revision	Checked	Approved





act id

rd tf

Activity Bar/Early Dates

description

Critical Activity

Progress Bar

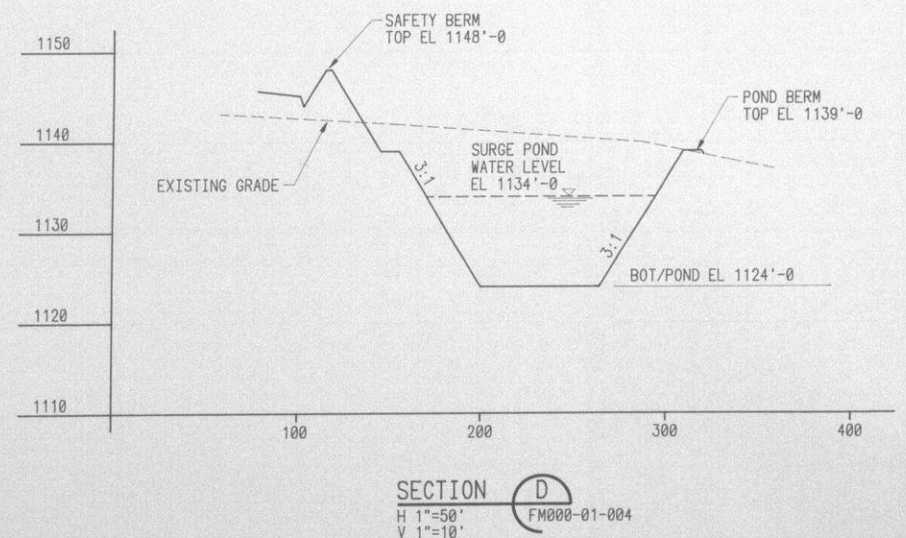
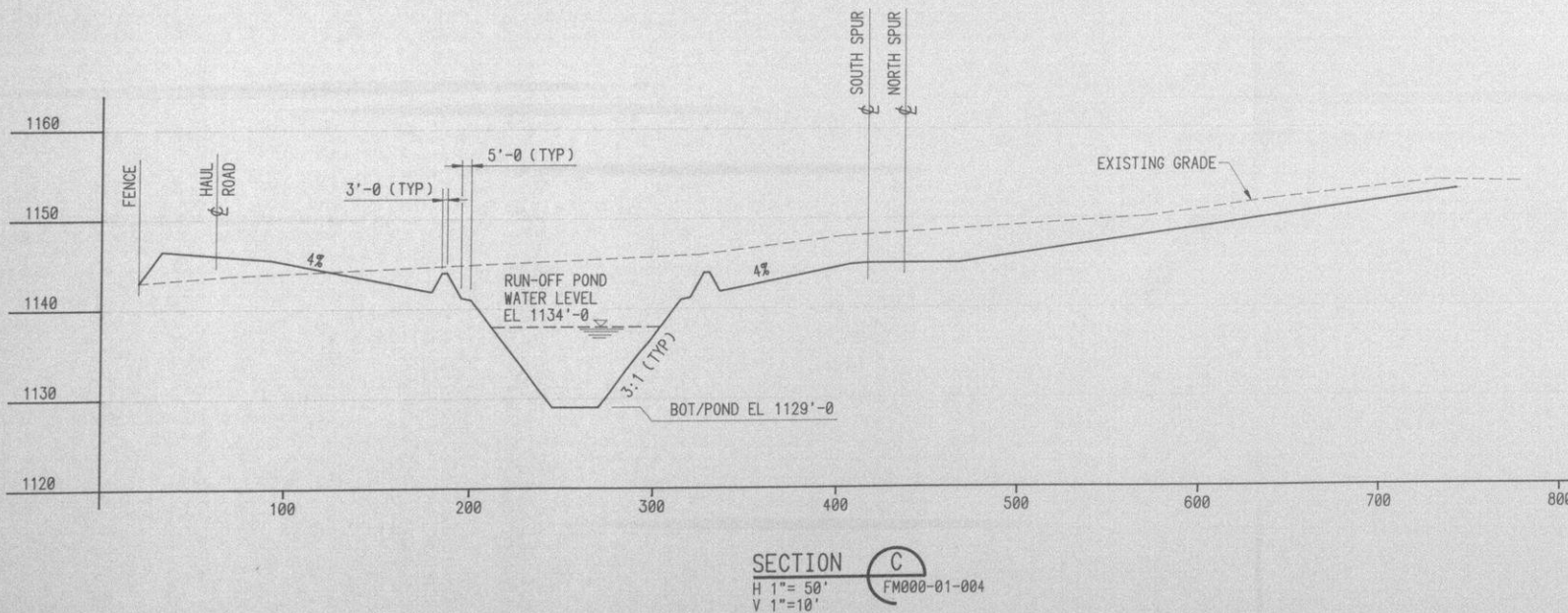
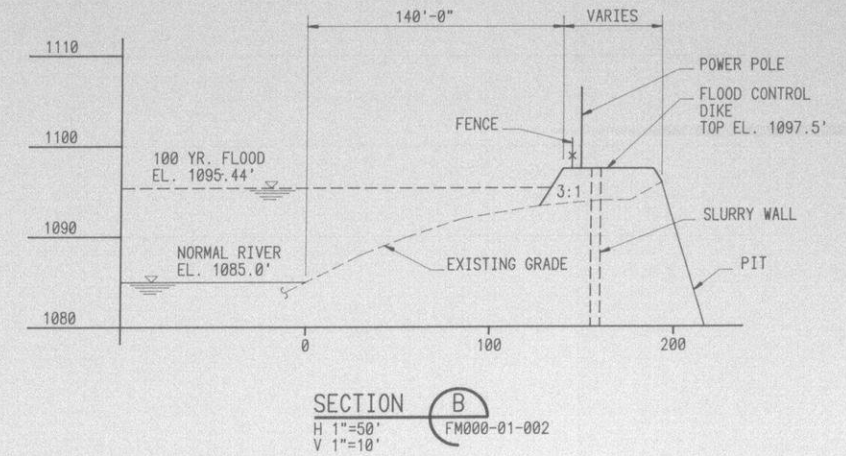
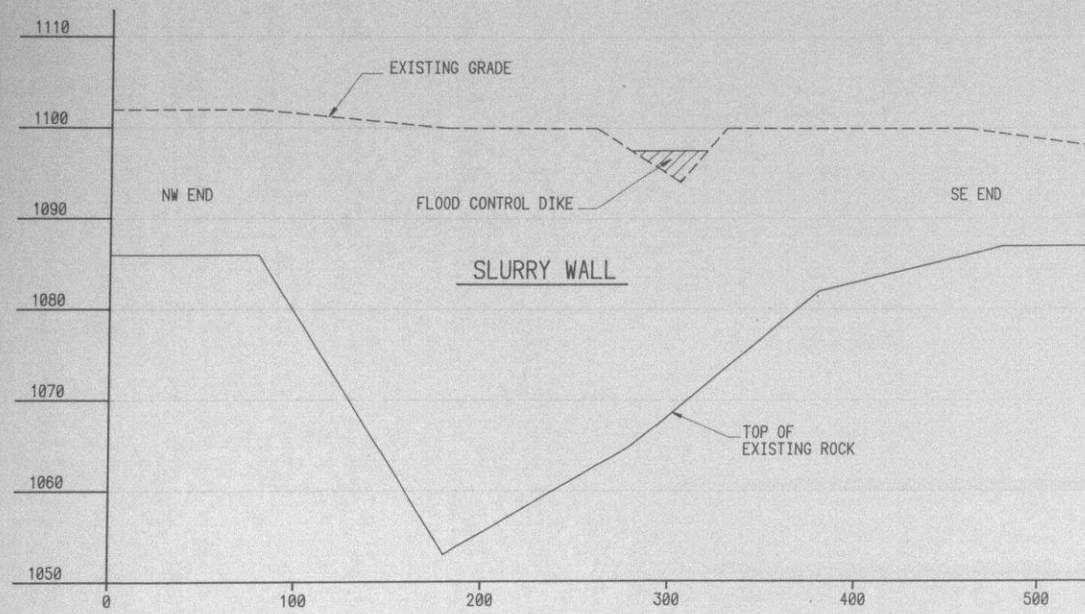
Primavera Systems, Inc. 1984-1989

KENNECOTT MINERALS COMPANY
FLAMBEAU PROJECT
ENGINEERING/CONSTRUCTION SCHEDULE

Sheet 2 of 2

Data Date: 1AUG90
Plot Date: 3JAN90

FIGURE NO. 4-5			
Date	Revision	Checked	Approved



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SALT LAKE CITY, UTAH

FLAMBEAU PROJECT
LADYSMITH, WISCONSIN

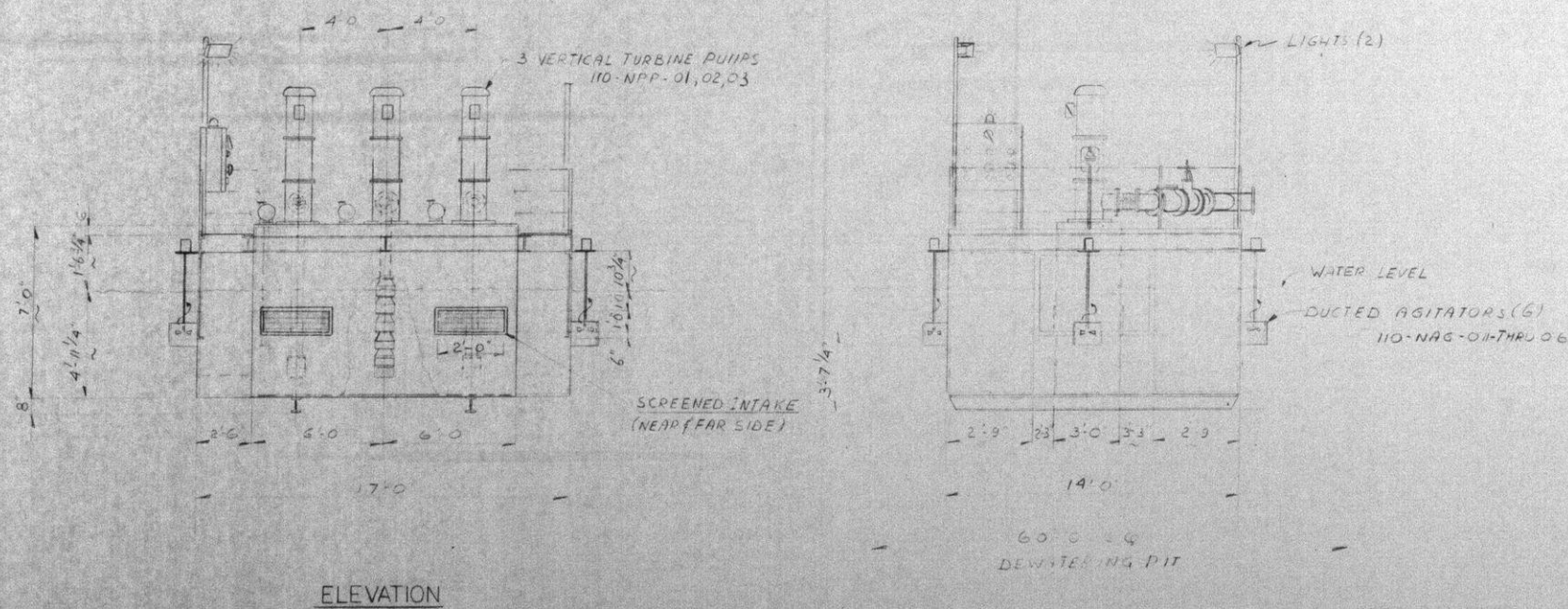
**KENNECOTT
MINERALS
COMPANY**
1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

FIGURE NO. 4-8
SITE GRADING
MISC. SECTIONS

MICROFILM		JOB	
		M6033R	
DRAWING NO.		REV.	
FM000-01-014		B	
DIVISION DRAWING NO.			
OWNER OPERATED			
SCALE		NOTED	

[illegible]

	BY	CHK'D	ENGR	ENGR MGR		BY	DATE		BY	DATE
					PROJ. ENGR			DESIGN		
					MGR PROCESS			DRAWN	GB	12-14-88
					ENGR			CHK'D		
					ENGR MGR			DES. ENGR		
								SECT ENGR		



Ford, Bacon & Davis, Incorporated
ENGINEERS-CONSTRUCTORS
SALT LAKE CITY, UTAH



FLAMBEAU PROJECT
LADYSMITH, WISCONSIN

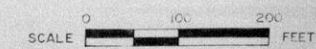
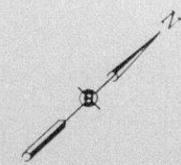
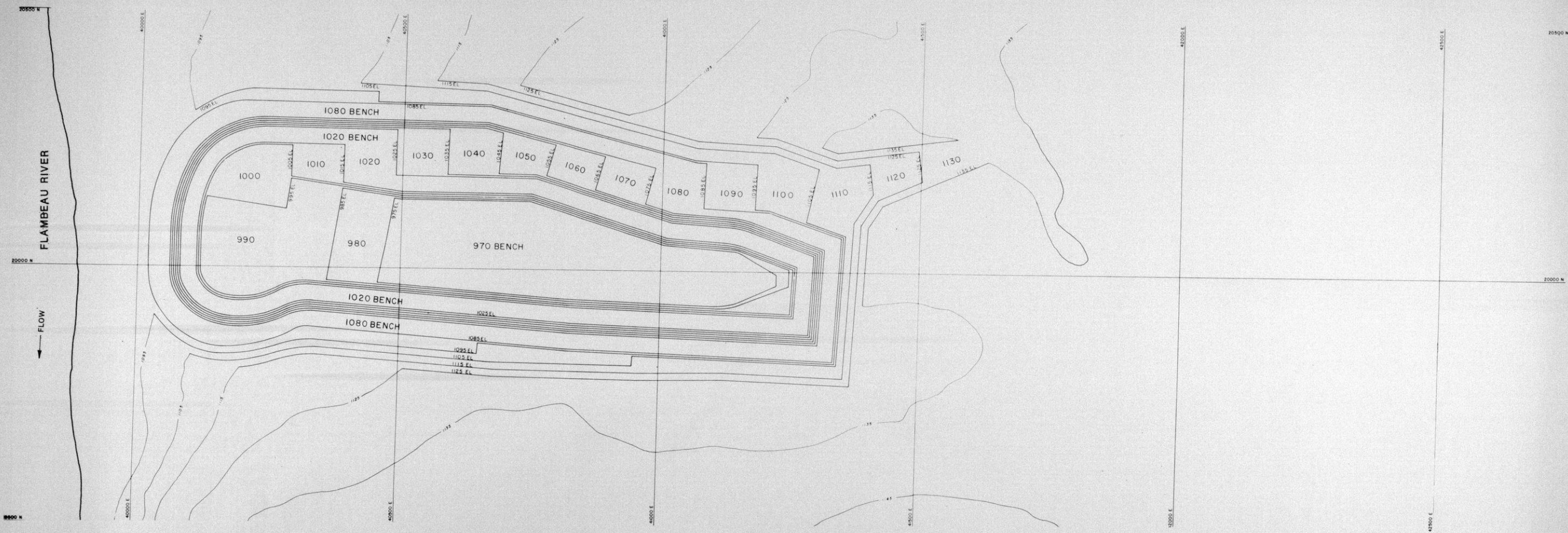
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MINERALS
COMPANY**

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SALT LAKE CITY, UTAH
84112

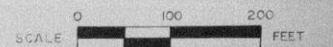
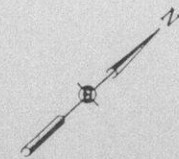
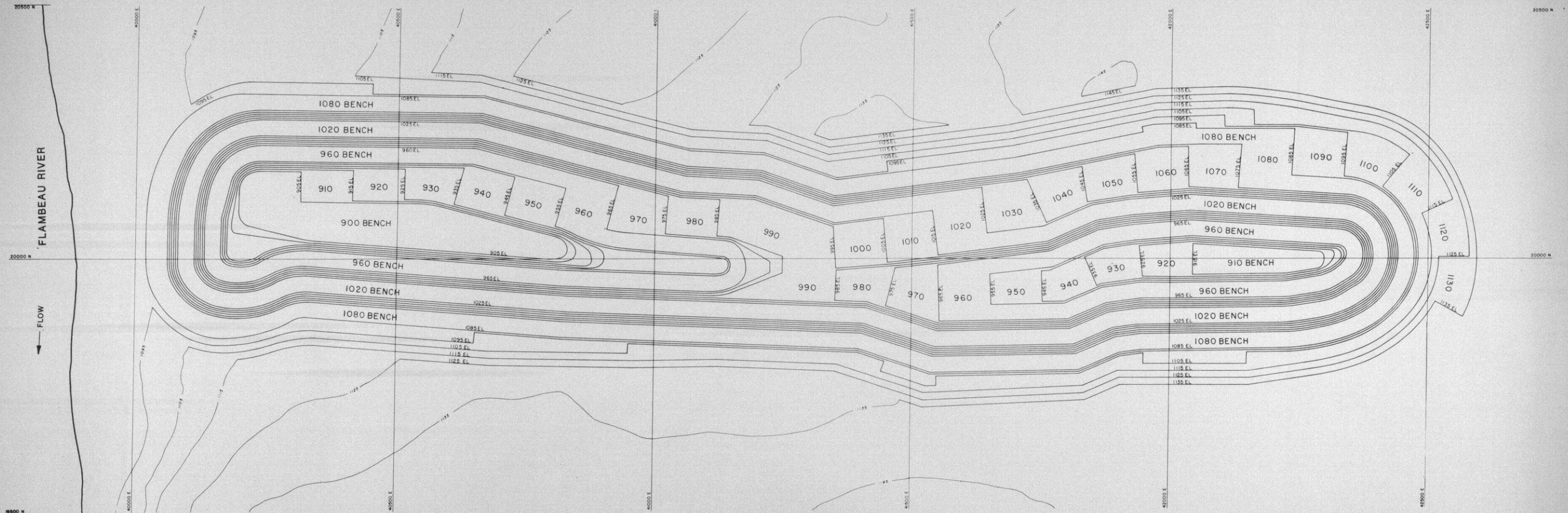
FIGURE NO. 4-9
MECHANICAL DETAILS
PUMP BARGE

MICROFILM		JOB	
		M6033R	
DRAWING NO.		REV.	
FM000-01-026		0	
DIVISION DRAWING NO.			
OWNER OPERATED			
SCALE	1/4" = 1'-0"		

[illegible]



														PINCOCK, ALLEN & HOLT, INC.										FLAMBEAU PROJECT										MICROFILM		JOB	
														LAKEWOOD, COLORADO										LADYSMITH, WISCONSIN													
																								KENNECOTT MINERALS COMPANY										DRAWING NO.		REV.	
																								FIGURE NO. 4-10													
																								PHASE I PIT DESIGN													
																								DIVISION DRAWING NO.													
																								1515 MINERAL SQUARE													
																								SALT LAKE CITY, UTAH													
																								84112										SCALE			



PINCOCK, ALLEN & HOLT, INC.
LAKEWOOD, COLORADO

FLAMBEAU PROJECT
LADYSMITH, WISCONSIN

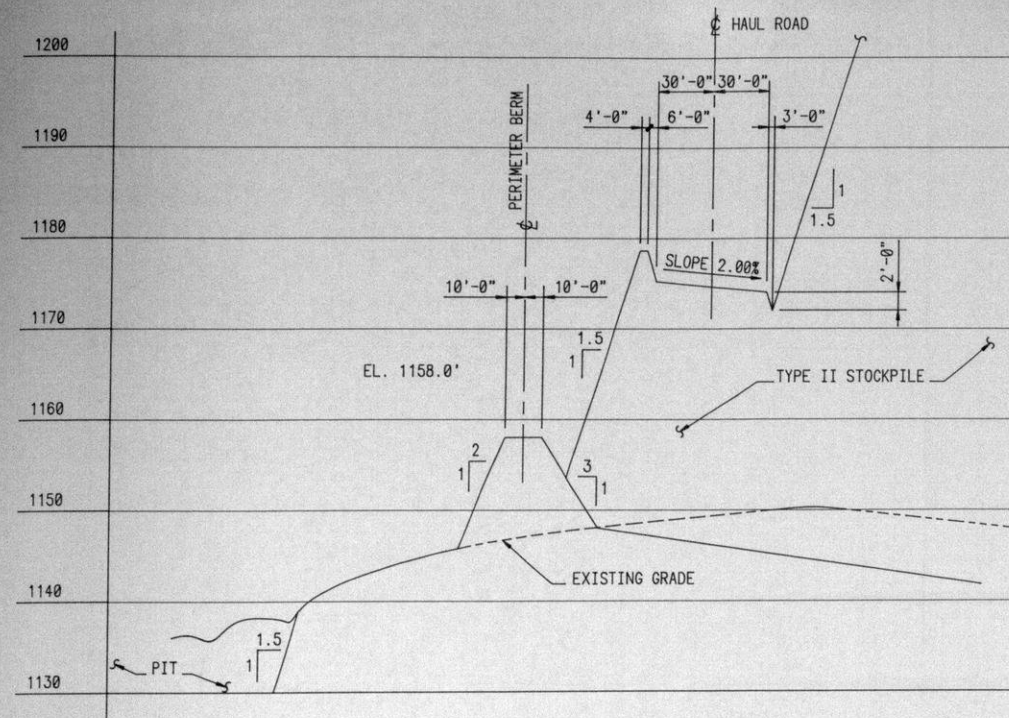
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MINERALS
COMPANY
1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

FIGURE NO. 4-11
FINAL PIT DESIGN

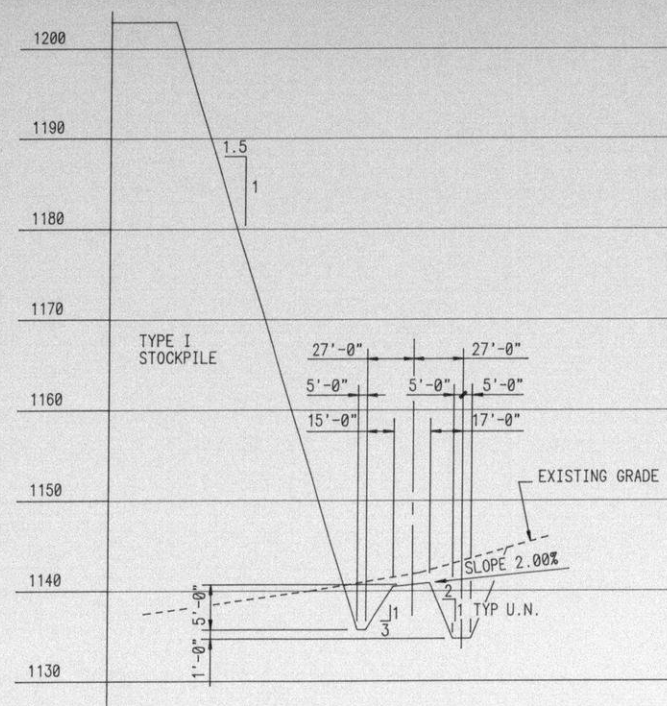
MICROFILM	JOB
DRAWING NO.	REV.
DIVISION DRAWING NO.	
SCALE	

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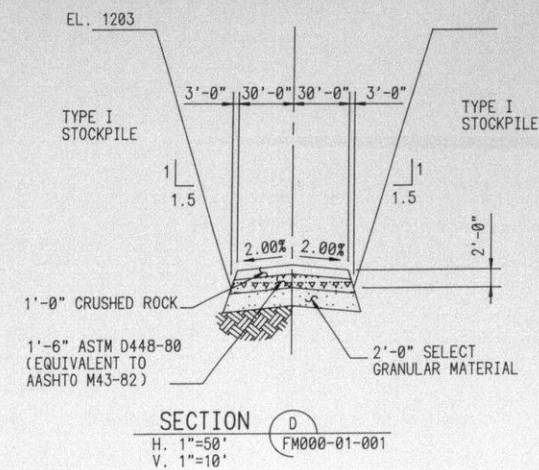
PROJ. ENGR	BY	DATE	DESIGN	BY	DATE
MGR. PROJECT			DRAWN	D.H.S.	3/89
ENGR. MGR.			CHK'D	M.J.O.	3/89
			DES. ENGR		
			SECT. ENGR		



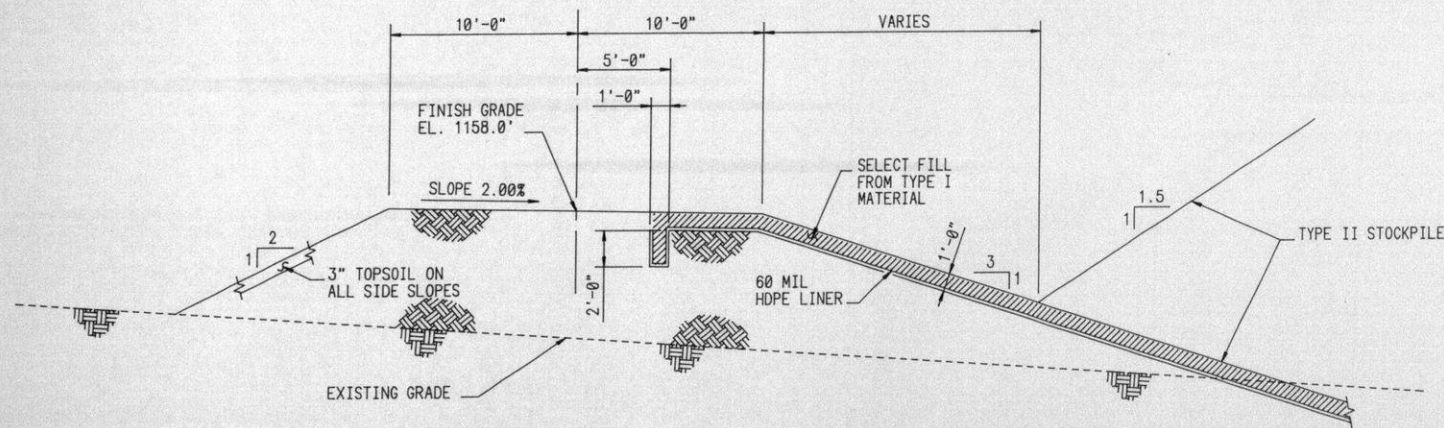
SECTION A
H. 1"=50'
V. 1"=10'
FM000-01-002



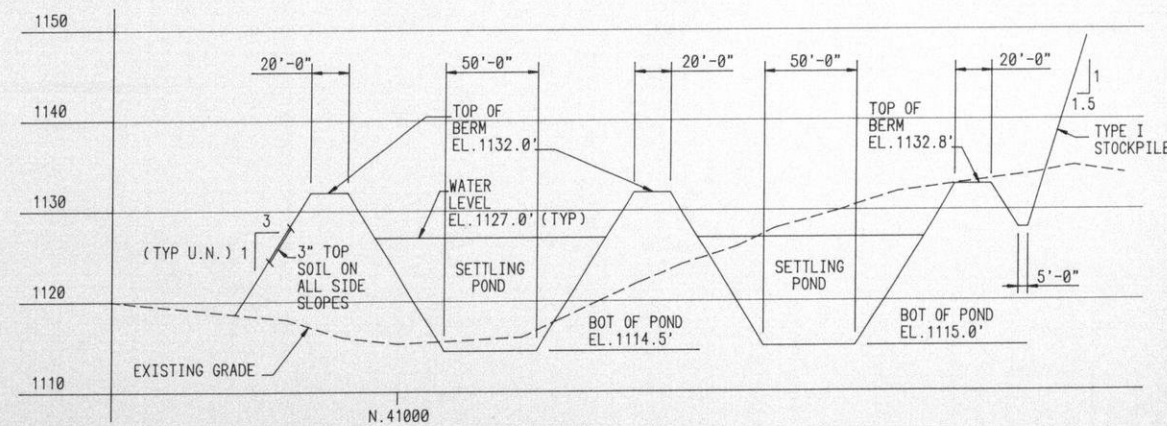
SECTION B
H. 1"=50'
V. 1"=10'
FM000-01-001



SECTION D
H. 1"=50'
V. 1"=10'
FM000-01-001



TYPICAL PERIMETER BERM TYPE II SECTION
SCALE: 1"=5'-0"



SECTION C
H. 1"=50'
V. 1"=10'
FM000-01-002

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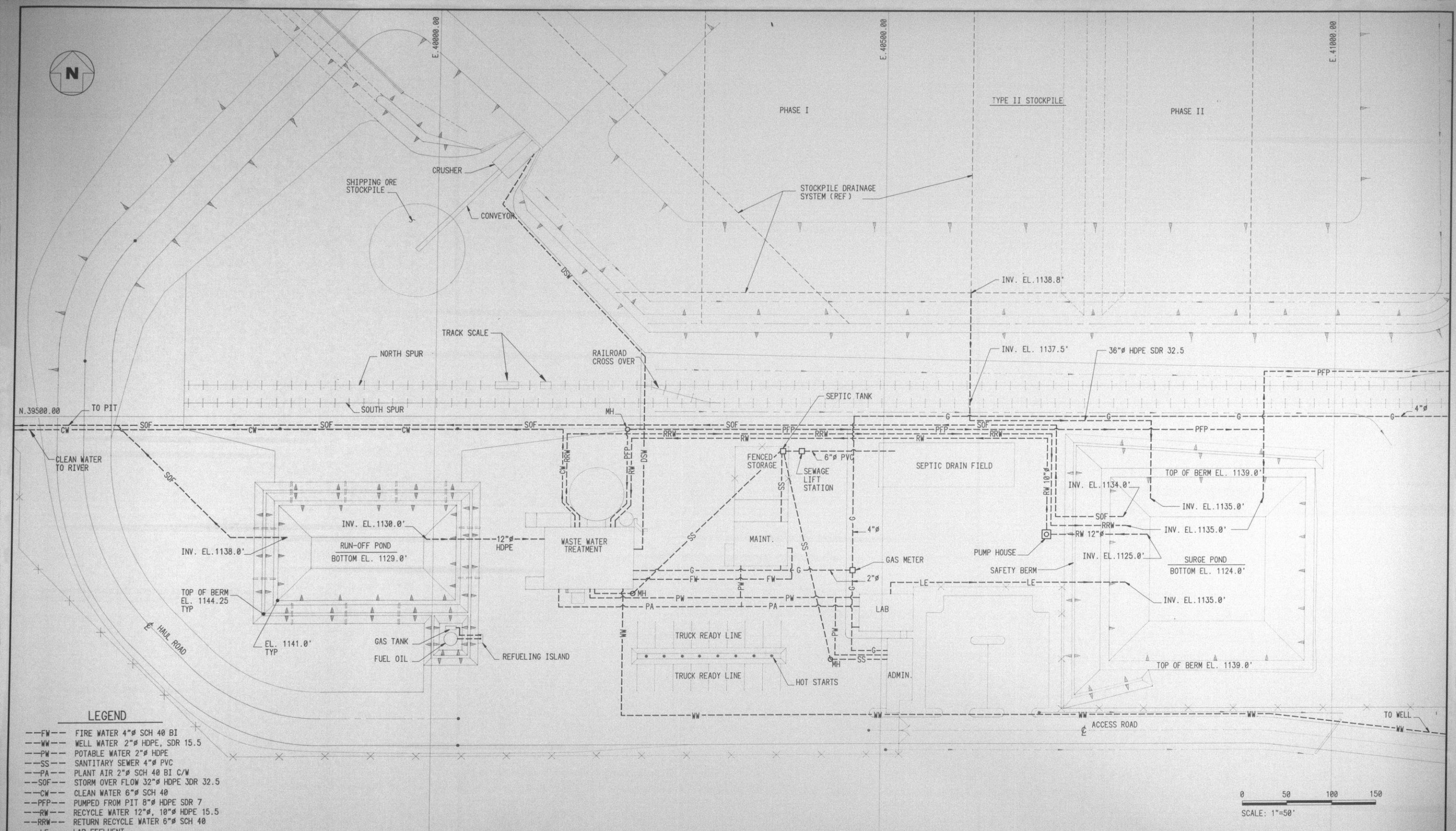
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LADYSMITH, WISCONSIN

KENNECOTT MINERALS COMPANY

1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

FIGURE NO. 4-15
SITE GRADING
STOCKPILE SECTIONS

MICROFILM	JOB
	M6033R
DRAWING NO.	REV.
FM000-01-011	B
DIVISION DRAWING NO.	
OWNER OPERATED	
SCALE	NOTED



LEGEND

- FW FIRE WATER 4" SCH 40 BI
- WW WELL WATER 2" HDPE, SDR 15.5
- PW POTABLE WATER 2" HDPE
- SS SANITARY SEWER 4" PVC
- PA PLANT AIR 2" SCH 40 BI C/W
- SOF STORM OVER FLOW 32" HDPE SDR 32.5
- CW CLEAN WATER 6" SCH 40
- PFP PUMPED FROM PIT 8" HDPE SDR 7
- RW RECYCLE WATER 12", 10" HDPE 15.5
- RRW RETURN RECYCLE WATER 6" SCH 40
- LE LAB EFFLUENT
- G GAS
- DSW DUST SUPPRESSION WATER

0 50 100 150
SCALE: 1"=50'

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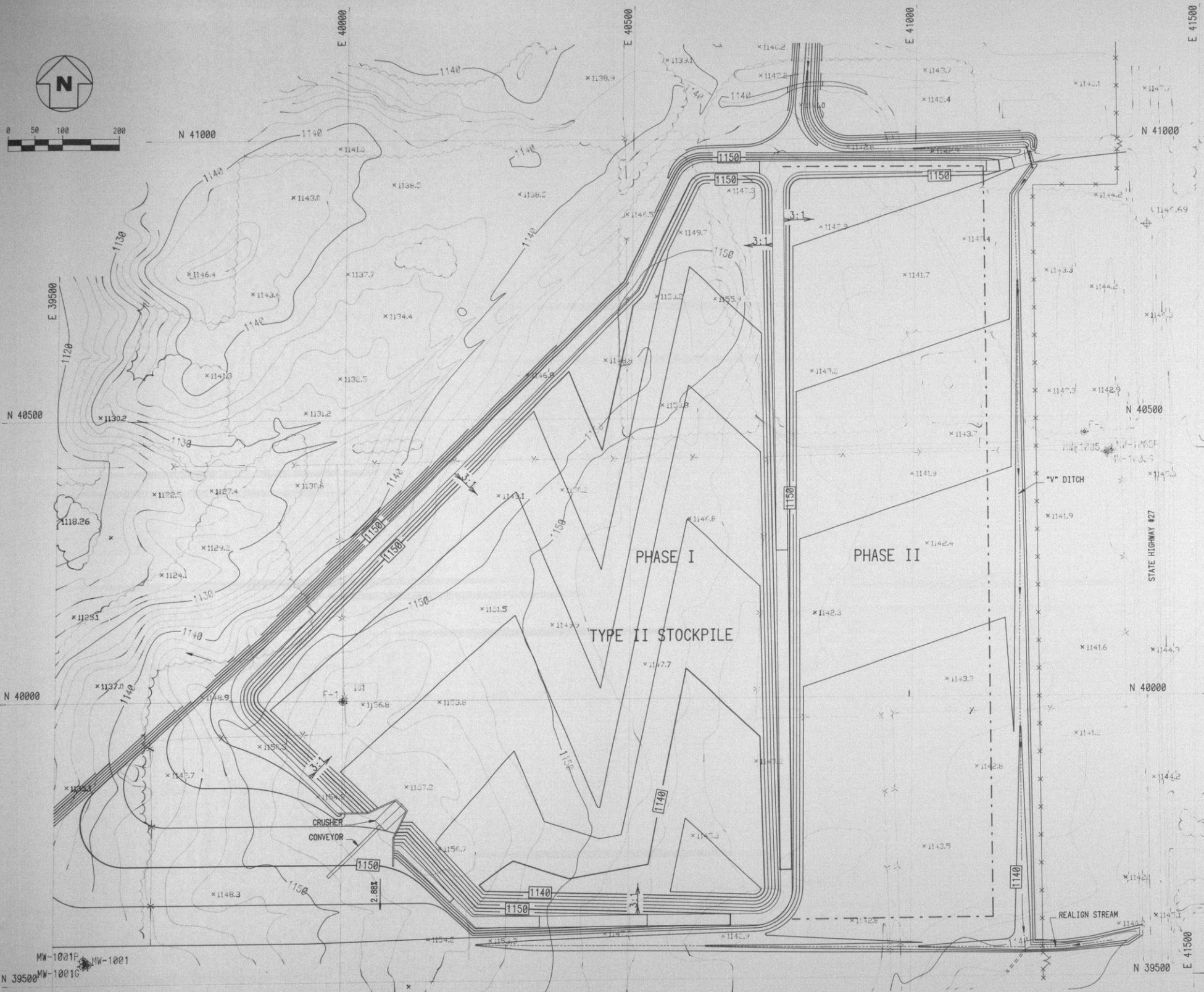
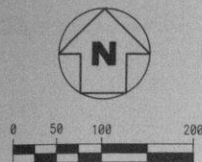
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COMPANY
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SALT LAKE CITY, UTAH
84112

FIGURE NO. 4-16
UNDERGROUND PIPING
PLAN

MICROFILM	JOB
	M6033R
DRAWING NO.	REV.
FM000-01-005	3
DIVISION DRAWING NO.	
OWNER OPERATED	
SCALE	1"=50'

REFERENCES	DWG. NO.	DESCRIPTION	REFERENCES	DWG. NO.	DESCRIPTION	BY	DATE	REVISIONS	BY	CHK'D	ENGR	ENGR	NO	DATE	REVISIONS	
														1	2/23/89	GENERAL REVISION
														2	3/21/89	GENERAL REVISION
														3	11/30/89	REVISED DRAIN LINE ROUTE



- LEGEND:
- - - - - EXISTING GROUND CONTOUR
 - x 1140.2 EXISTING SPOT ELEVATIONS
 - (T) TREES AND/OR BRUSH
 - - - - - EXISTING FENCE
 - [] EXISTING BUILDINGS
 - W-1001P GROUNDWATER MONITORING WELL LOCATION AND NUMBER
 - F-1 CONTROL MONUMENTS
 - - - - - PROPOSED LIMITS OF WASTE PLACEMENT
 - - - - - PHASE LIMITS
 - [1140] PROPOSED CONTOUR
 - 2.5% PROPOSED SLOPE
 - 3:1 PROPOSED SLOPE RATIO
 - PROPOSED CULVERT
 - - - - - DITCH OR STREAM FLOW LINE
 - x x x PROPOSED FENCE

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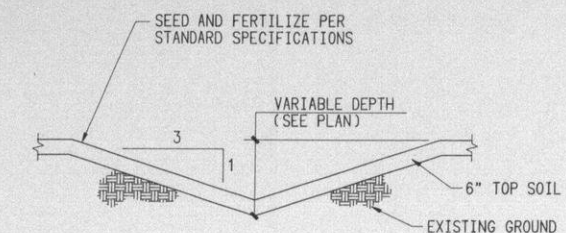
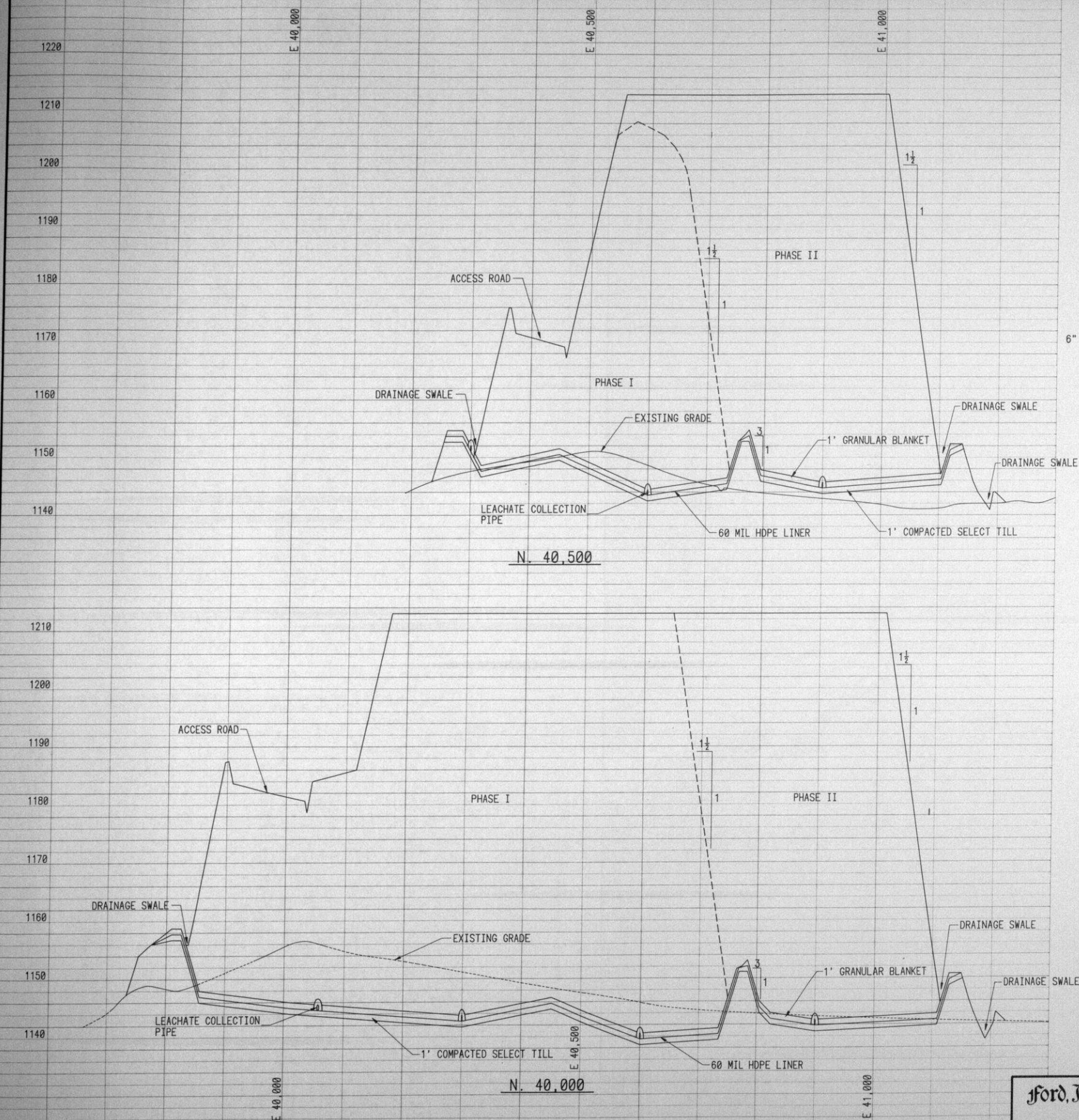
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KENNECOTT MINERALS COMPANY
1515 MINERAL SQUARE
SALT LAKE CITY, UTAH 84112

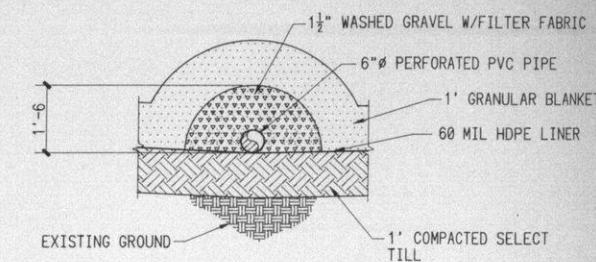
FIGURE NO. 4-19
TYPE II STOCKPILE
PHASE I BASE GRADES

MICROFILM	JOB
	M6033R
DRAWING NO.	REV.
FM001-01-062	A
DIVISION DRAWING NO.	
SCALE	1"=100'

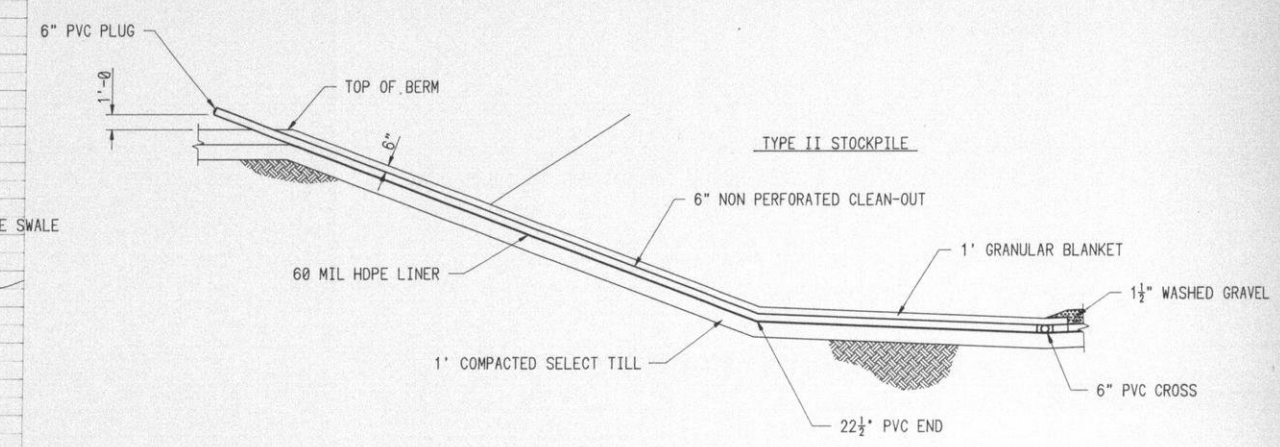
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																		MGR PROCESS	PSH	1/14/89
																		ENGR		
																		ENGR MOR		
																		DES. ENGR		
																		SECT ENGR		



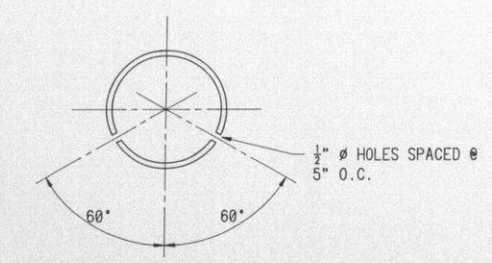
"V" DITCH DETAIL 1
NO SCALE 069



LEACHATE COLLECTION SYSTEM DETAIL 2
NO SCALE 069



TYPICAL CLEAN-OUT RISER SECTION A
NO SCALE 063



PIPE PERFORATION PATTERN 3
NO SCALE 069

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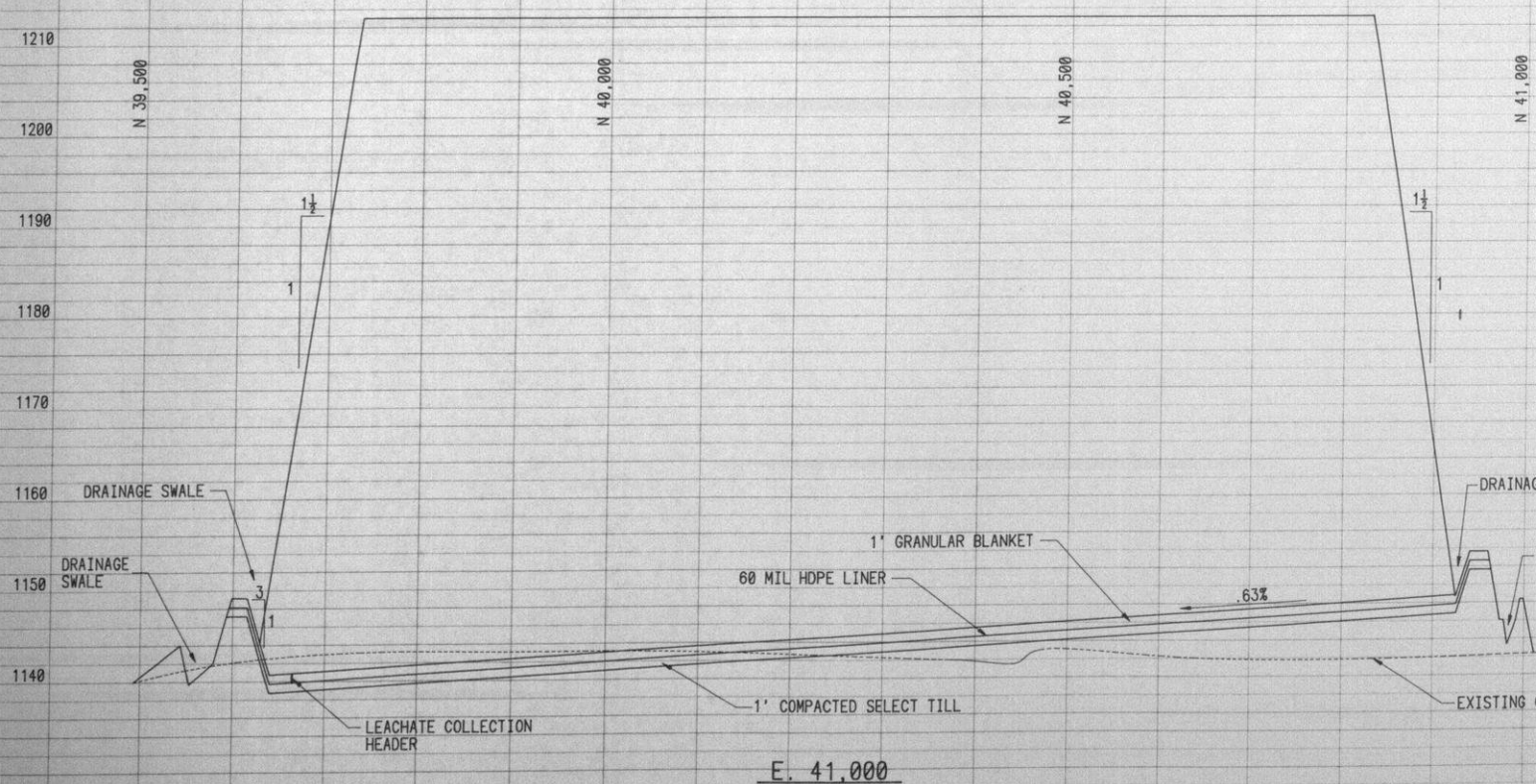
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SALT LAKE CITY, UTAH
84112

FIGURE NO. 4-20
CONTAMINATED WATER
COLLECTION SYSTEM
ENGINEERING CROSS SECTIONS

MICROFILM	JOB
	M6033R
DRAWING NO.	REV.
FM000-01-069	0
DIVISION DRAWING NO.	
SCALE	AS NOTED

DWG. NO.	DESCRIPTION	BY	DATE	REVISIONS	BY	CHK'D	ENGR	ENGR MGR	NO	DATE	REVISIONS	BY	CHK'D	ENGR	ENGR MGR	PROJ. ENGR	DES. ENGR	SECT ENGR
									0	12/15/89	GENERAL REVISION							

DWG. NO.	DESCRIPTION	BY	DATE	REVISIONS	BY	CHK'D	ENGR	ENGR MGR	PROJ. ENGR	DES. ENGR	SECT ENGR



**KENNECOTT
MINERALS
COMPANY**
1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

MICROFILM		JOB	
		M6033R	
DRAWING NO.		REV.	
FM000-01-070		A	
DIVISION DRAWING NO.			
SCALE	AS NOTED		

[illegible]

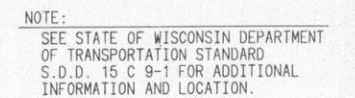
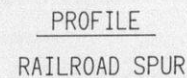
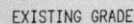
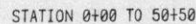
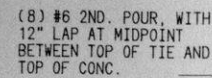


Diagram illustrating the components of a pipe seal protection strip of liner material:

- STAINLESS STEEL CLAMP
- PIPE SEAL PROTECTION STRIP OF LINER MATERIAL
- BOOT
- 60 MIL HDPE LINER

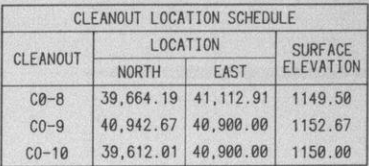
PIPE PENETRATION SEAL
(TYPICAL FOR PIPES LESS THAN 36" DIAMETER)



**KENNECOTT
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COMPANY**
1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

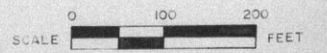
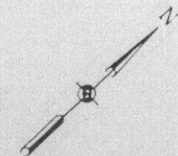
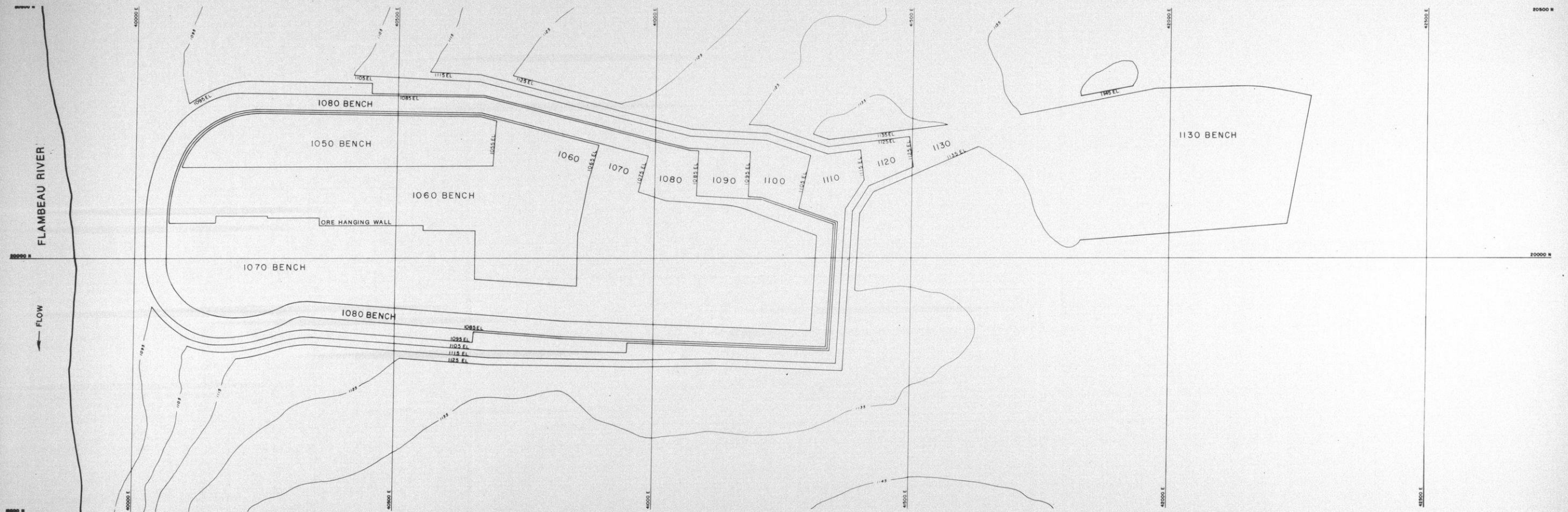
MICROFILM	JOB
	M6033R
DRAWING NO.	REV.
FM000-01-010	1
DIVISION DRAWING NO.	
OWNER OPERATED	
SCALE	NOTED

[illegible]



- LEGEND:
- | | |
|--|---|
| | EXISTING GROUND CONTOUR |
| | EXISTING SPOT ELEVATIONS |
| | TREES AND/OR BRUSH |
| | EXISTING FENCE |
| | EXISTING BUILDINGS |
| | GROUNDWATER MONITORING WELL LOCATION AND NUMBER |
| | CONTROL MONUMENTS |
| | PROPOSED LIMITS OF WASTE PLACEMENT |
| | PHASE LIMITS |
| | PROPOSED CONTOUR |
| | PROPOSED SLOPE |
| | PROPOSED SLOPE RATIO |
| | PROPOSED CULVERT |
| | DITCH OR STREAM FLOW LINE |
| | PROPOSED FENCE |

FLAMBEAU PROJECT LADYSMITH, WISCONSIN		MICROFILM	JOB	
		M6033R		
KENNECOTT MINERALS COMPANY 1515 MINERAL SQUARE SALT LAKE CITY, UTAH 84112	FIGURE NO. 4-26		DRAWING NO.	REV.
	TYPE II STOCKPILE		FM000-01-067	A
	PHASE I FINAL GRADES AND		DIVISION DRAWING NO.	
	PHASE II LEACHATE COLLECTION SYSTEM			
			SCALE	1"=100'



PINCOCK, ALLEN & HOLT, INC.
LAKEWOOD, COLORADO

FLAMBEAU PROJECT
LADYSMITH, WISCONSIN

KENNECOTT
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COMPANY
1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

FIGURE NO. 4-29
END OF 1ST QUARTER
YEAR 1

MICROFILM	JOB
DRAWING NO.	REV.
DIVISION DRAWING NO.	
SCALE	

REFERENCES

DWG. NO.	DESCRIPTION

REFERENCES

DWG. NO.	DESCRIPTION	NO.	DATE	REVISIONS	BY	CHKD	ENGR	DATE	NO.	DATE	REVISIONS

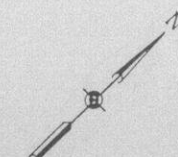
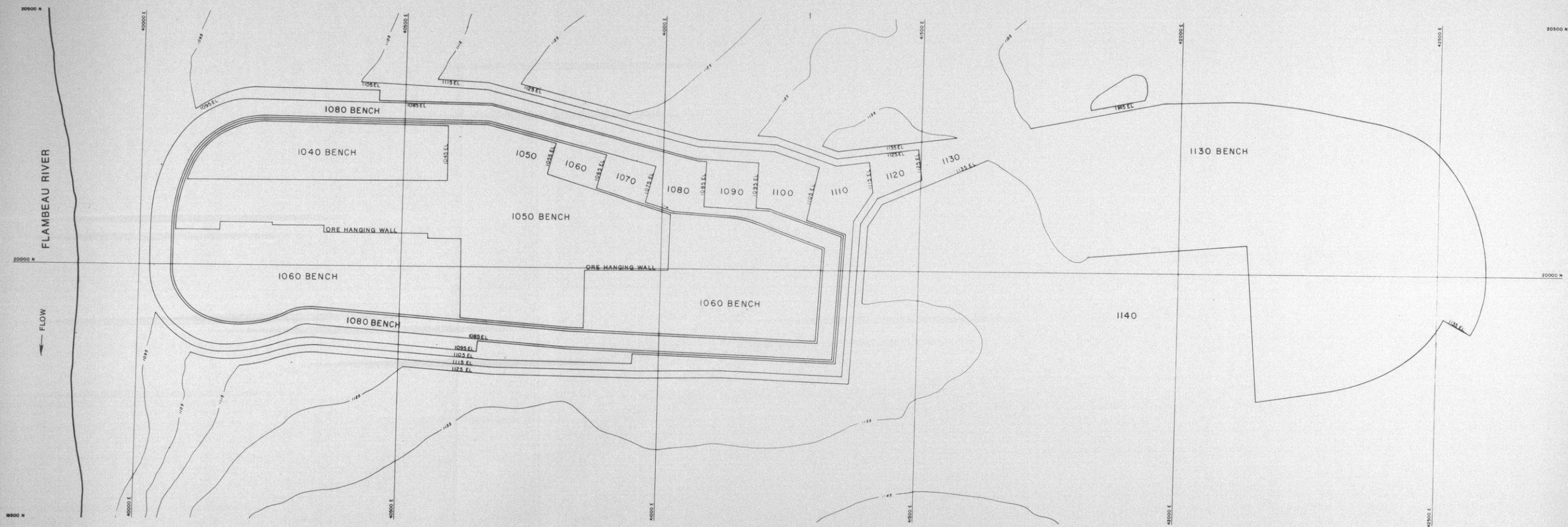
BY	CHKD	ENGR	DATE

BY	CHKD	ENGR	DATE

BY	CHKD	ENGR	DATE

BY	CHKD	ENGR	DATE

BY	CHKD	ENGR	DATE



A horizontal scale bar with alternating black and white segments. Above the bar, the numbers 0, 100, and 200 are printed. Below the bar, the word "SCALE" is on the left and "FEET" is on the right.

PINCOCK, ALLEN & HOLT, INC.
LAKEWOOD, COLORADO

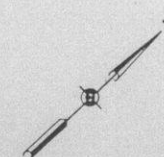
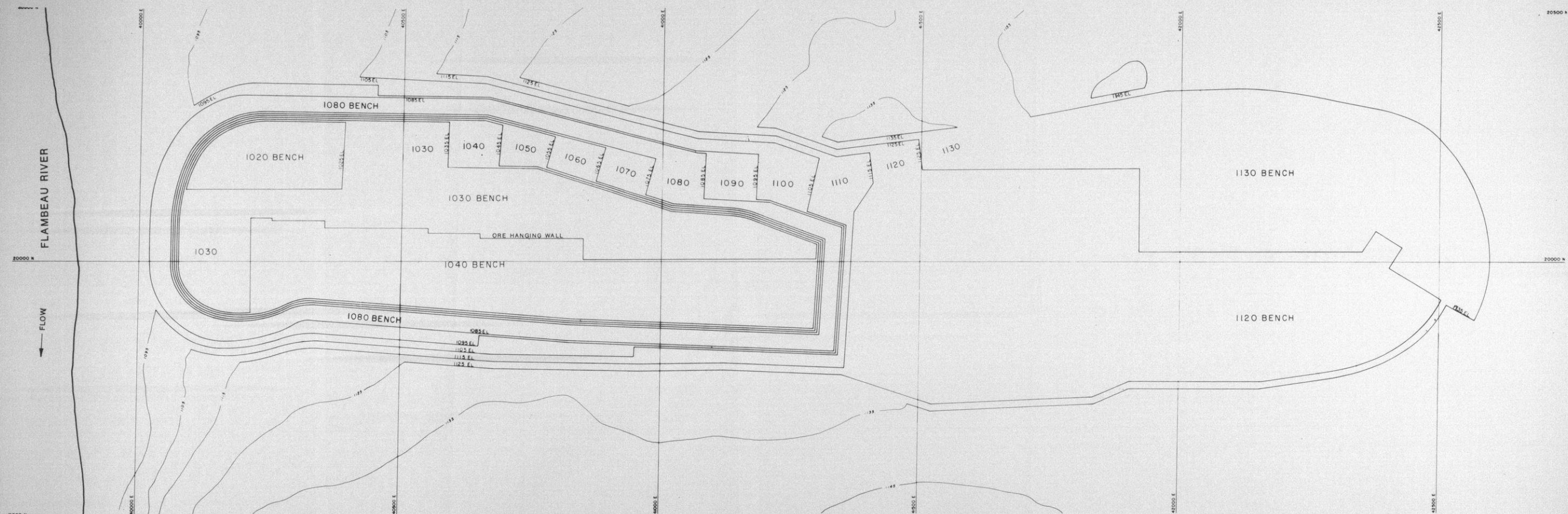
FLAMBEAU PROJECT
LADYSMITH, WISCONSIN

**KENNECOTT
MINERALS
COMPANY**
1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

FIGURE NO. 4-30
END OF 2ND QUARTER
YEAR 1

MICROFILM	JOB
DRAWING NO.	REV.
DIVISION DRAWING NO.	
SCALE	

REFERENCES	DWG. NO.	DESCRIPTION	REFERENCES	DWG. NO.	DESCRIPTION	NO.	DATE	REVISIONS	BY	CHKD	ENGR	ENGR MR.	NO.	DATE	REVISIONS	BY	CHKD	ENGR	ENGR MR.	DESIGN ENGR	BY	DATE	DESIGN ENGR	BY	DATE
																				PREL. ENGR			DESIGN	D. H. S.	3/89
																				MR. JOHNSON			CHKD	M. J. O.	3/89
																				ENGR MR.			DES. ENGR		
																						SECT. ENGR			



0 100 200
SCALE FEET

PINCOCK, ALLEN & HOLT, INC.
LAKEWOOD, COLORADO

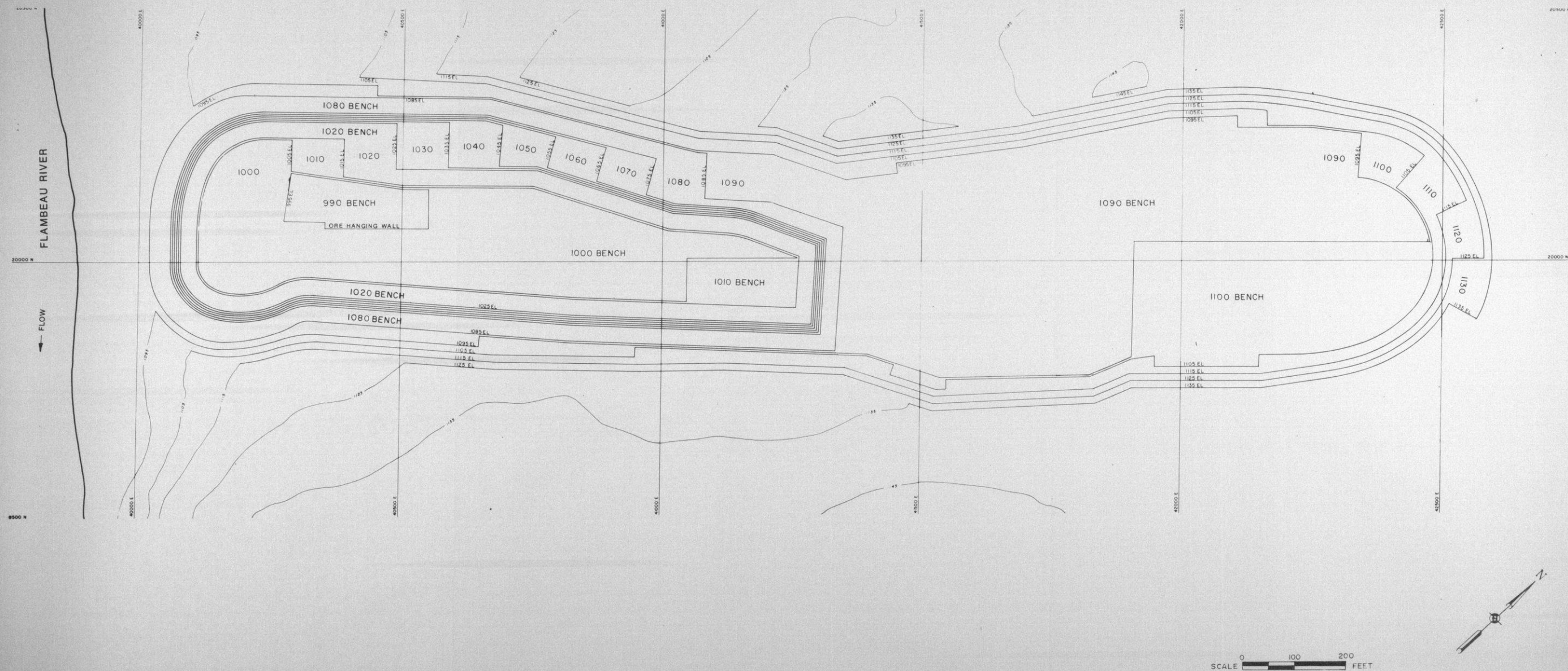
FLAMBEAU PROJECT
LADYSMITH, WISCONSIN

**KENNECOTT
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1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

FIGURE NO. 4-32
END OF YEAR 1

MICROFILM	JOB
DRAWING NO.	REV.
DIVISION DRAWING NO.	
SCALE	

REFERENCES	DWG. NO.		DESCRIPTION		NO.	DATE	REVISIONS				BY	CHKD	ENGR	ENGR NAME	NO.	DATE	REVISIONS				BY	CHKD	ENGR	ENGR NAME	DESIGN	BY	DATE	BY	DATE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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PINCOCK, ALLEN & HOLT, INC.
LAKEWOOD, COLORADO

FLAMBEAU PROJECT
LADYSMITH, WISCONSIN

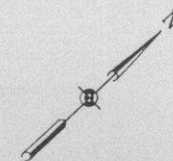
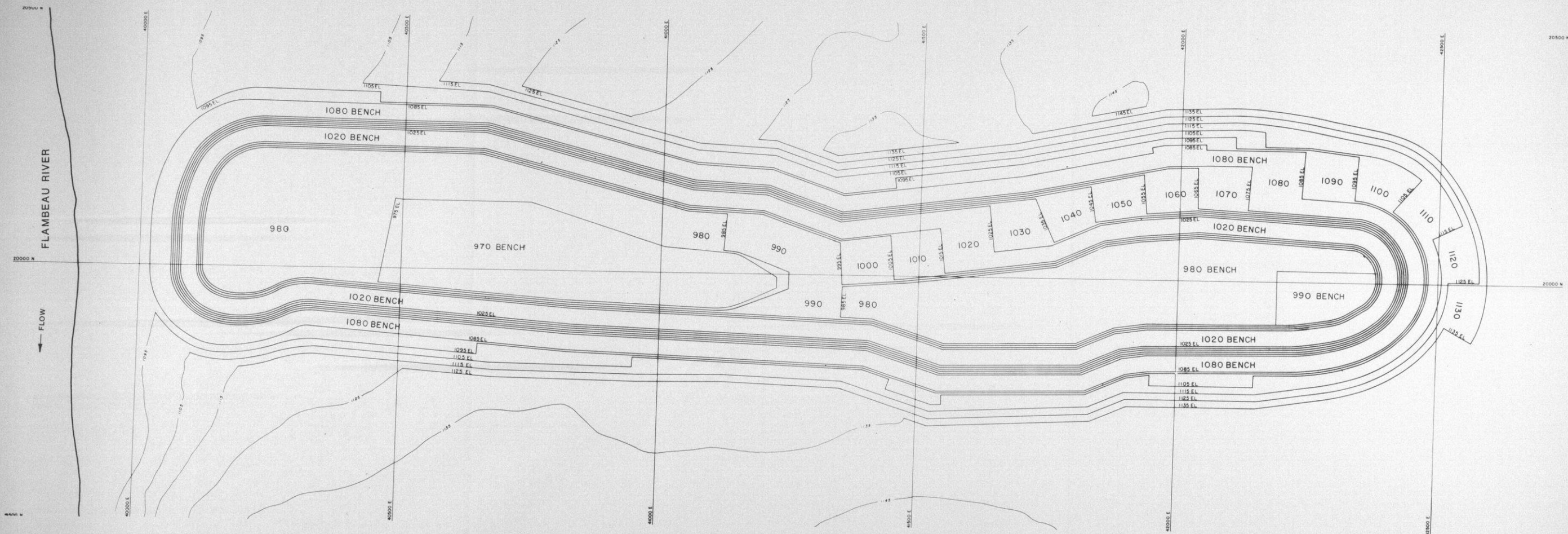
**KENNECOTT
MINERALS
COMPANY**
1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

FIGURE NO. 4-33

END OF YEAR 2

MICROFILM	JOB
DRAWING NO.	REV.
DIVISION DRAWING NO.	
SCALE	

[illegible]



A horizontal scale bar with markings at 0, 100, and 200. The word "SCALE" is at the left end and "FEET" is at the right end. The bar is divided into alternating black and white segments.

PINCOCK, ALLEN & HOLT, INC.
LAKEWOOD, COLORADO

FLAMBEAU PROJECT
LADYSMITH, WISCONSIN

KENNECOTT
MINERALS
COMPANY

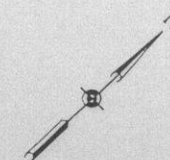
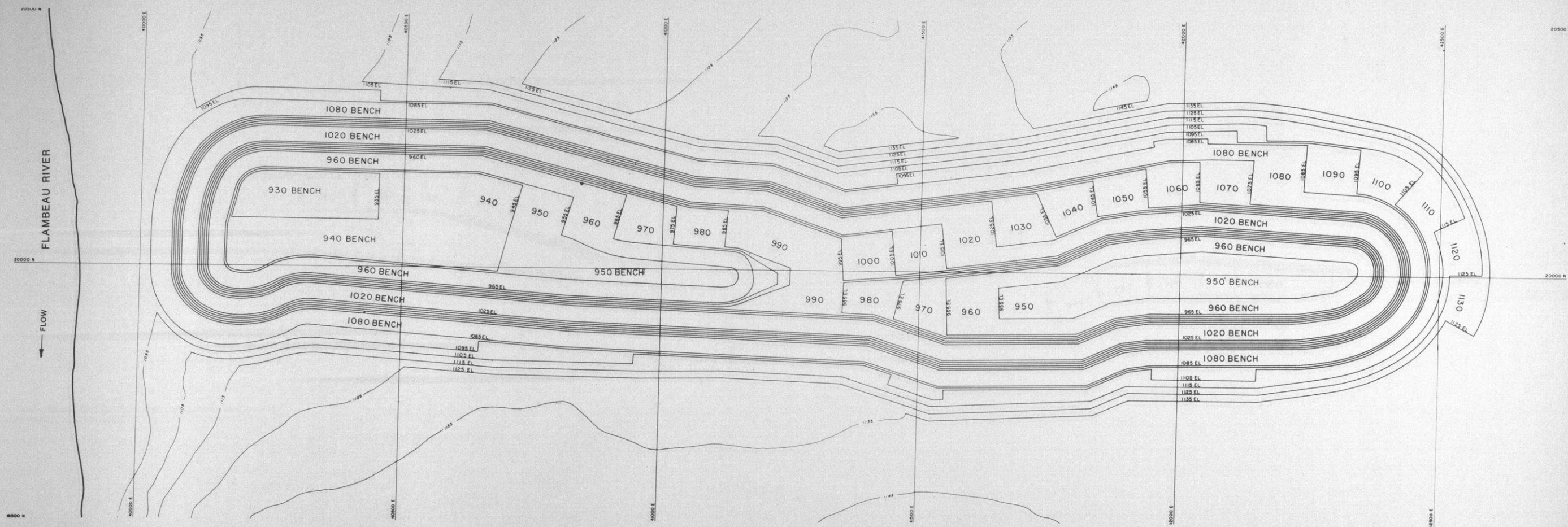
FIGURE NO. 4-35

END OF YEAR 4

1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

MICROFILM	JOB
DRAWING NO.	REV.
DIVISION DRAWING NO.	
SCALE	

[illegible]



0 100 200
SCALE FEET

PINCOCK, ALLEN & HOLT, INC.
LAKEWOOD, COLORADO

FLAMBEAU PROJECT
LADYSMITH, WISCONSIN

**KENNECOTT
MINERALS
COMPANY**
1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

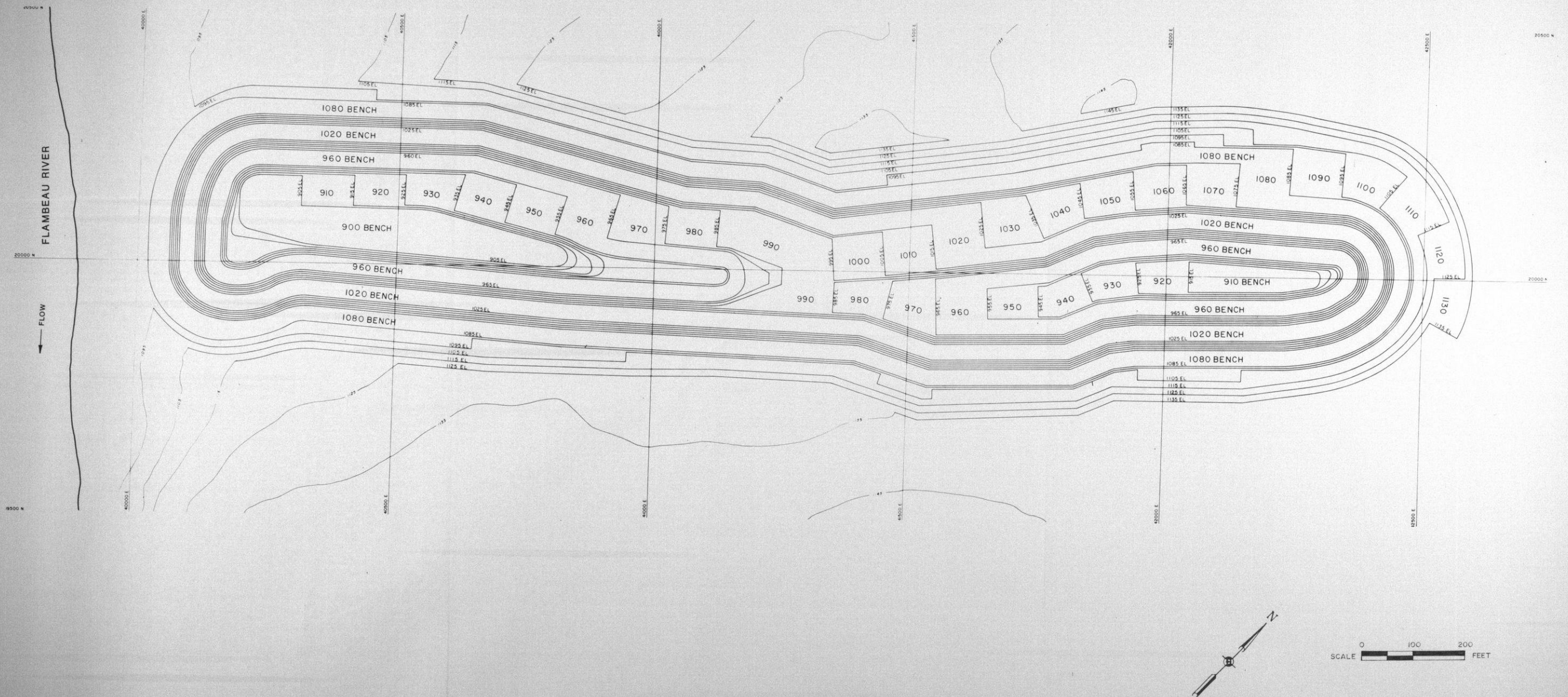
FIGURE NO. 4-36

END OF YEAR 5

MICROFILM	JOB
DRAWING NO.	REV.
DIVISION DRAWING NO.	
SCALE	

[illegible][illegible]

BY	CHK'D	ENGR	ENG MGR		BY	DATE		BY	DATE
				PULL ENGR			DESIGN		
				MOR SUCCESS			DRAWN	D.H.S.	3/89
				ENGR MOR			CHK'D	M.J.O.	3/89
							DES ENGR		
							SECT ENGR		



PINCOCK, ALLEN & HOLT, INC.						FLAMBEAU PROJECT						MICROFILM		JOB	
LAKEWOOD, COLORADO						LADYSMITH, WISCONSIN									
BY	CHK'D	ENGR.	DATE	BY	DATE	KENNECOTT MINERALS COMPANY	FIGURE NO. 4-37					DRAWING NO.	REV.		
							END OF 3RD QUARTER								
							YEAR 6					DIVISION DRAWING NO.			
							FINAL PIT DESIGN								
												SCALE			
						1515 MINERAL SQUARE									
						SALT LAKE CITY, UTAH									
						84112									



N. 41000

E. 44000

MEADOW BROOK
STA. 17+18.39

MEADCO
STA.

—RAILROAD CROSSING
WARNING SIGN

DETAIL 1
1"=30' FM000-01-003

STATE HIGHWAY #27
STA. 48+49.47

SEE TYPICAL PAVEMENT
MARKING DETAIL ON
DWG. FM000-01-010

F. 41500

550'-0"
TYP

— 24 L.F. 24" RCP
CULVERT

N. 39500

AUTOMATIC CROSSING
SIGNALS W/ GATE ____

12'-0"
MIN

N. 39000

STATE HIGHWAY #27

E. 41500

ACCESS ROAD

JANSEN ROAD

STOP SIGN

DETAIL  3
1"=30' FM000-01-003

DETAIL 2
1"=30' FM000-01-003

TYPICAL ROAD TANGENT CROSS-SECTION

Ford, Bacon & Davis, Incorporated
ENGINEERS-CONSTRUCTORS
SALT LAKE CITY, UTAH

FLAMBEAU PROJECT
LADYSMITH, WISCONSIN

**KENNECOTT
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COMPANY**

1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

FIGURE NO. 4-38

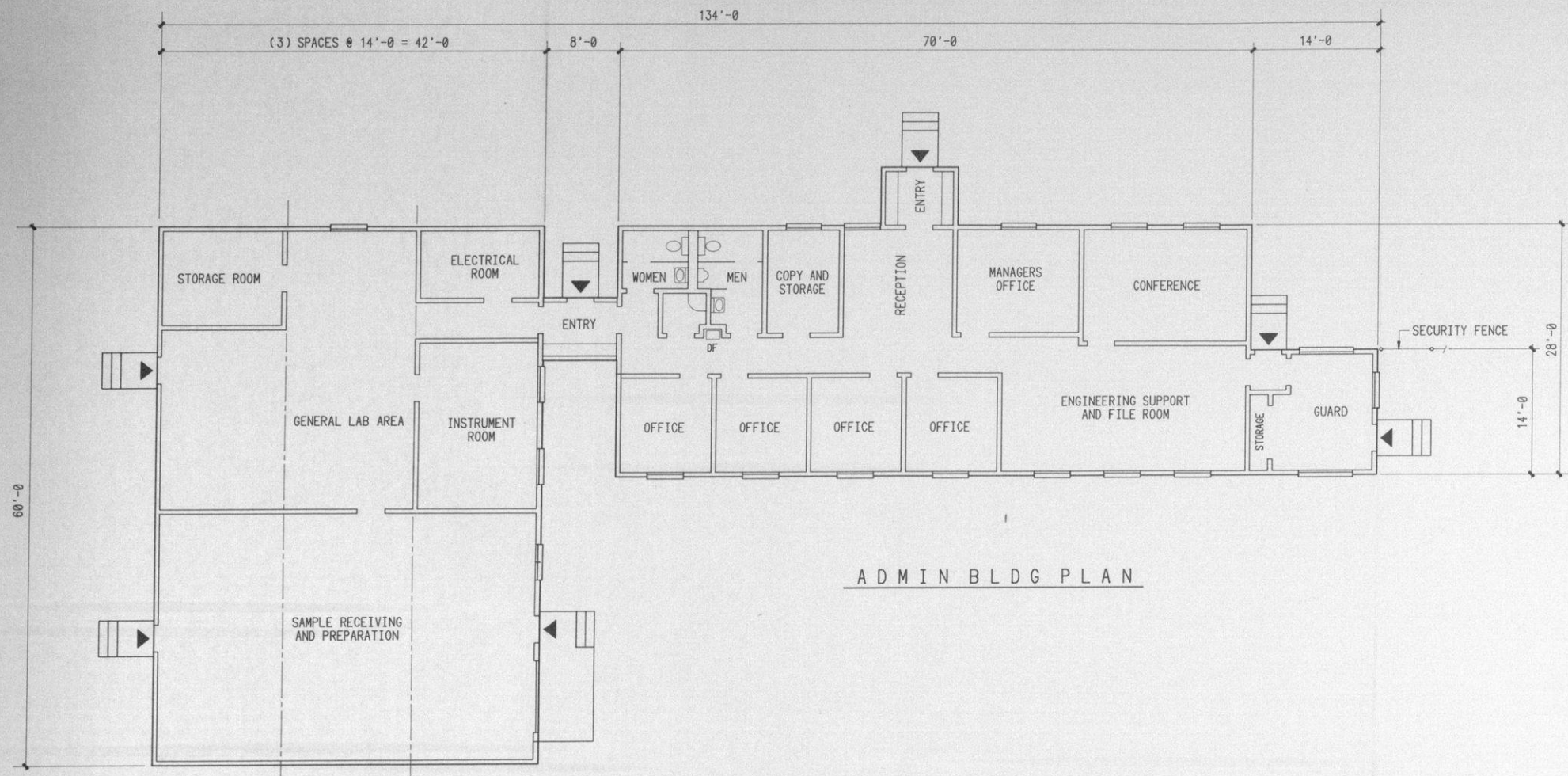
RAILROAD SPUR

CROSSING PLANS &

ROAD SECTIONS

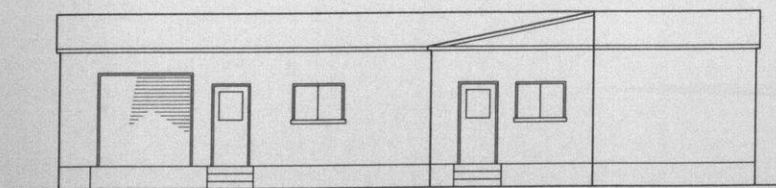
MICROFILM		JOB	
		M6033R	
DRAWING NO.		REV	
FM000-01-012		0	
DIVISION DRAWING NO.			
OWNER OPERATED			
SCALE	1"=30'		

[illegible]

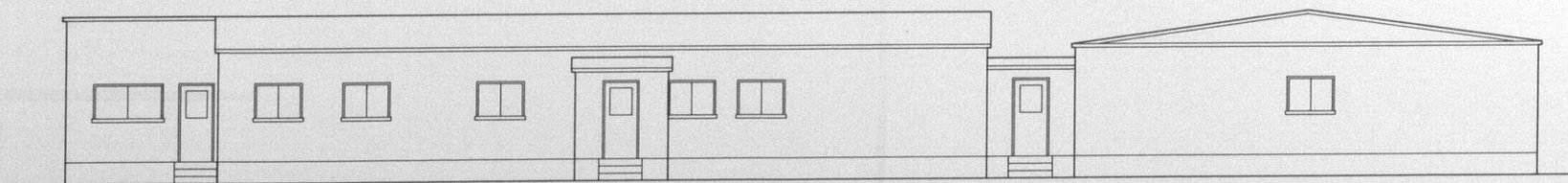


ADMIN BLDG PLAN

LAB BLDG PLAN



SOUTH ELEVATION
(LOOKING NORTH)



EAST ELEVATION
(FRONT OF BUILDINGS, LOOKING WEST)

Jford, Bacon & Davis, Incorporated
ENGINEERS-CONSTRUCTORS
SALT LAKE CITY, UTAH



FLAMBEAU PROJECT
LADYSMITH, WISCONSIN

**KENNECOTT
MINERALS
COMPANY**

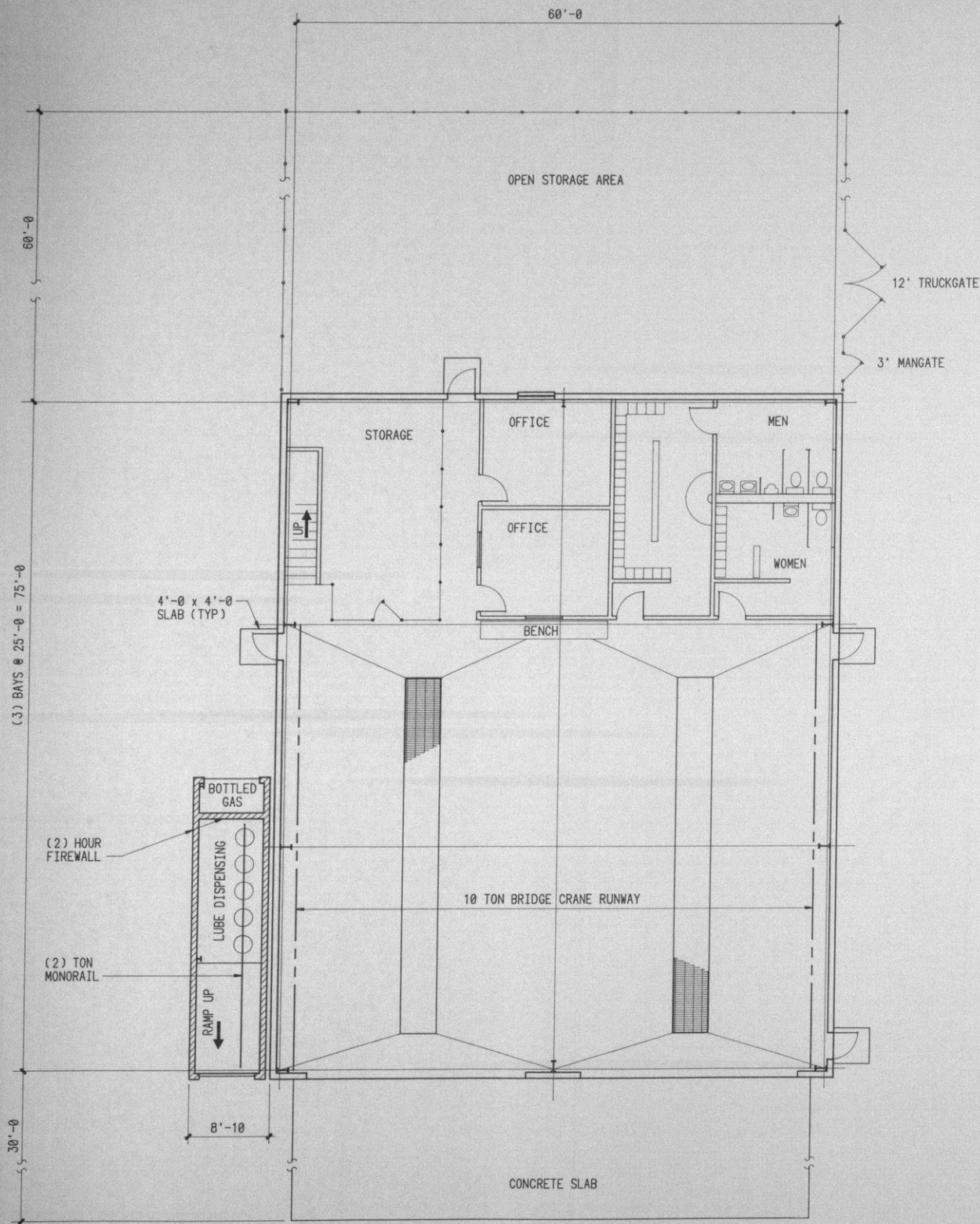
1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

FIGURE NO. 4-39
ADMINISTRATION BUILDING
LAB BUILDING
PLANS AND ELEVATIONS

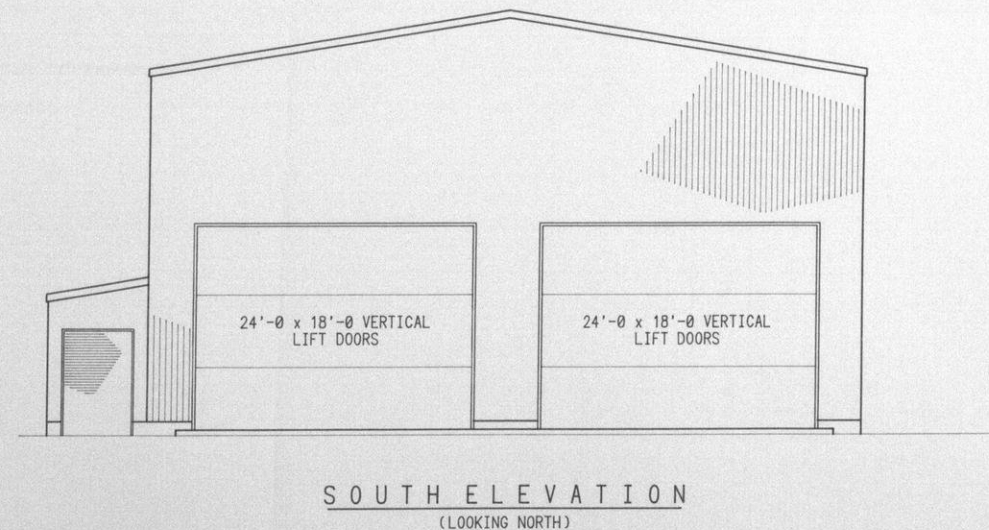
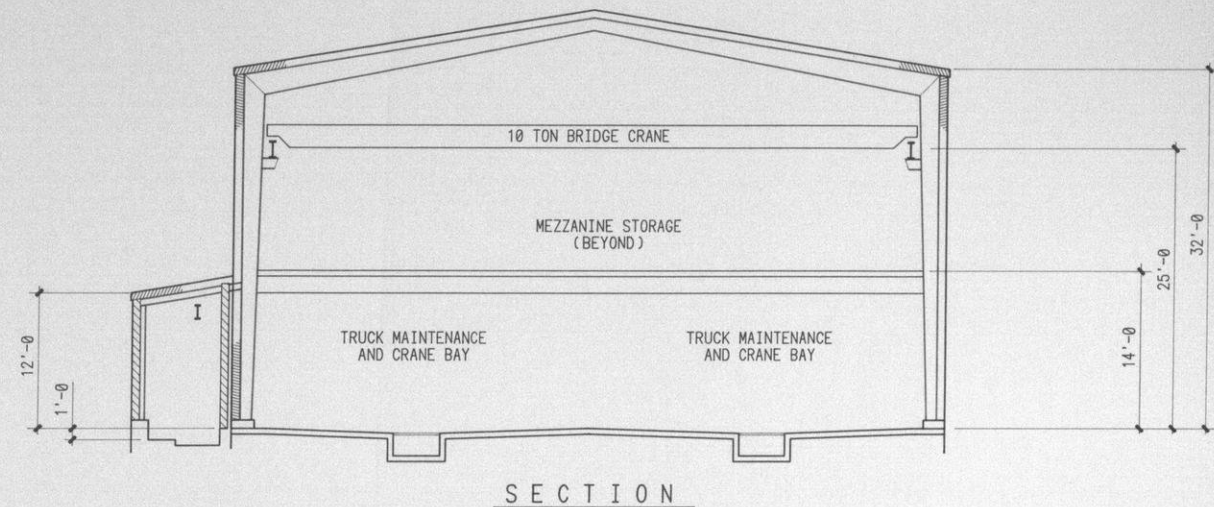
MICROFILM	JOB
	M6033R
DRAWING NO.	REV.
FM000-01-008	D
DIVISION DRAWING NO.	OWNER OPERATED
SCALE	1/8"=1'-0"

REF.	DWG. NO.	DESCRIPTION	BY	DATE	REVISIONS	BY	CHK'D	ENGR	ENGR	NO	DATE	REVISIONS	BY	CHK'D	ENGR	ENGR

PROJ. ENGR	BY	DATE	DESIGN	BY	DATE
MGR PROCESS			DRAWN	BTT	12-13-88
ENGR			CHK'D		
			DES. ENGR		
			SECT ENGR		



FLOOR PLAN
UBC - TYPE IIN CONSTRUCTION, H4 OCCUPANCY



1' 0" 5' 10'
SCALE 1/8"=1'-0"

Ford, Bacon & Davis, Incorporated
ENGINEERS-CONSTRUCTORS
SALT LAKE CITY, UTAH



FLAMBEAU PROJECT
LADYSMITH, WISCONSIN

**KENNECOTT
MINERALS
COMPANY**

1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

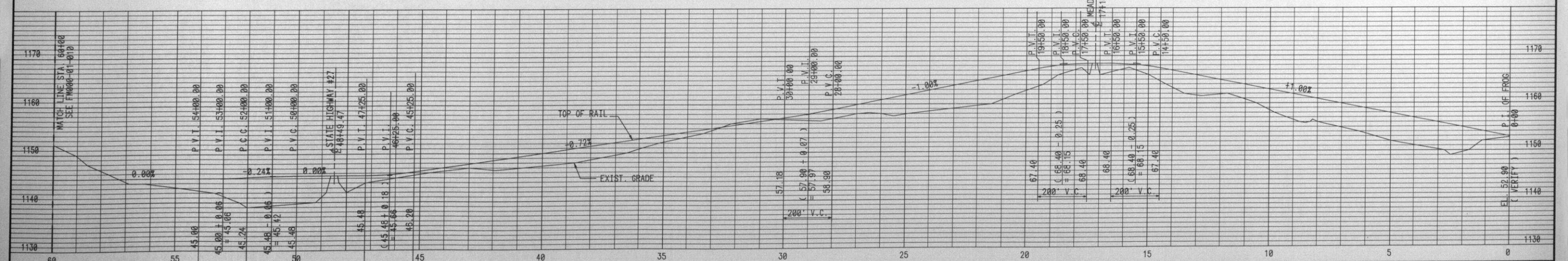
FIGURE NO. 4-40
MAINTENANCE BUILDING
FLOOR PLAN
SECTION AND ELEVATION

MICROFILM	JOB
	M6033R
DRAWING NO.	REV.
FM000-01-009	C
DIVISION DRAWING NO.	
OWNER OPERATED	
SCALE	1/8"=1'-0"

DWG. NO.	DESCRIPTION	DWG. NO.	DESCRIPTION	BY	DATE	REVISIONS	BY	CHK'D	ENGR	ENGR MGR	NO	DATE	REVISIONS	BY	CHK'D	ENGR	ENGR MGR

BY	DATE	DESIGN	BY	DATE
		DRAWN	BTT	12-12-88
		CHK'D		
		DES. ENGR		
		SECT ENGR		

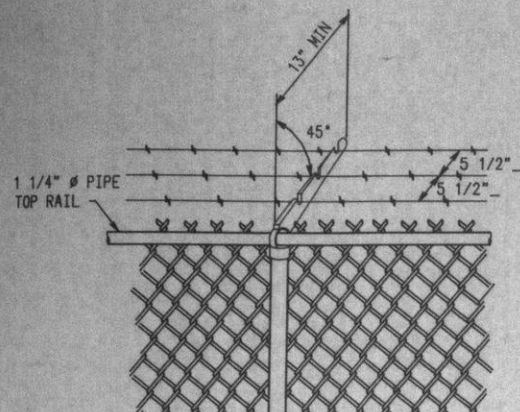
PROJ. ENGR	WDR. PROCESS	ENGR MGR



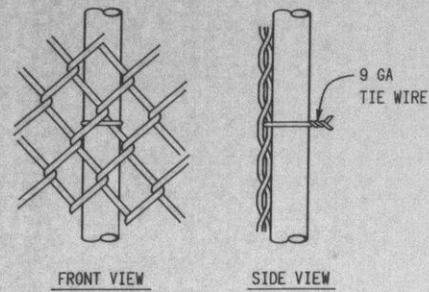
200' V.C.										200' V.C.										200' V.C.										200' V.C.																													
Ford, Bacon & Davis, Incorporated																														FLAMBEAU PROJECT										MICROFILM										JOB									
ENGINEERS-CONSTRUCTORS																				SALT LAKE CITY, UTAH										LADYSMITH, WISCONSIN										M6033R																			
																														DRAWING NO.										REV.																			
																														FM000-01-003										F																			
																														DIVISION DRAWING NO.																													
																														OWNER OPERATED																													
																														SCALE										1" = 200'																			

REFERENCES	DWG. NO	DESCRIPTION	DWG. NO	DESCRIPTION	BY	DATE	REVISIONS	BY	CHK'D	ENGR	ENGR MGR	NO	DATE	REVISIONS	BY	CHK'D	ENGR	ENGR MGR	PROJ. ENGR	DESIGN	BY	DATE	BY	DATE
																			MGR PROCESS	DRAWING	CEP	11-08-88	CEP	11-08-88
																			ENGR		CEP/WCB	11-09-88		
																			ENGR MGR	CHECK'D				
																				DES. ENGR				
																				SECT ENGR				

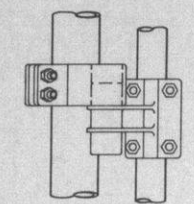
KENNECOTT MINERALS COMPANY										FIGURE NO. 4-41										RAILROAD SPUR									
1515 MINERAL SQUARE																													
SALT LAKE CITY, UTAH																													
84112																													



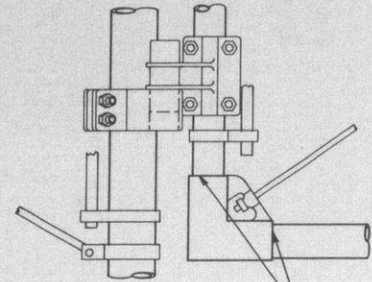
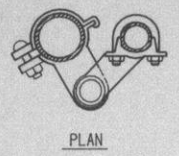
BARB WIRE ARM
AND TOP RAIL
WITH BARBED SELVAGE



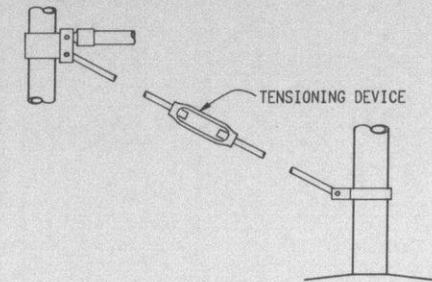
POST TIE DETAIL



ELEVATION
TOP GATE HINGE
180° SWING



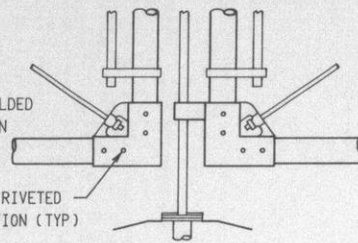
ELEVATION
BOTTOM GATE HINGE
AND GATE DETAILS
180° SWING



BRACE & TRUSS CONNECTIONS

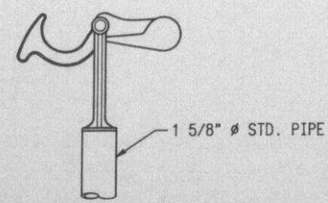
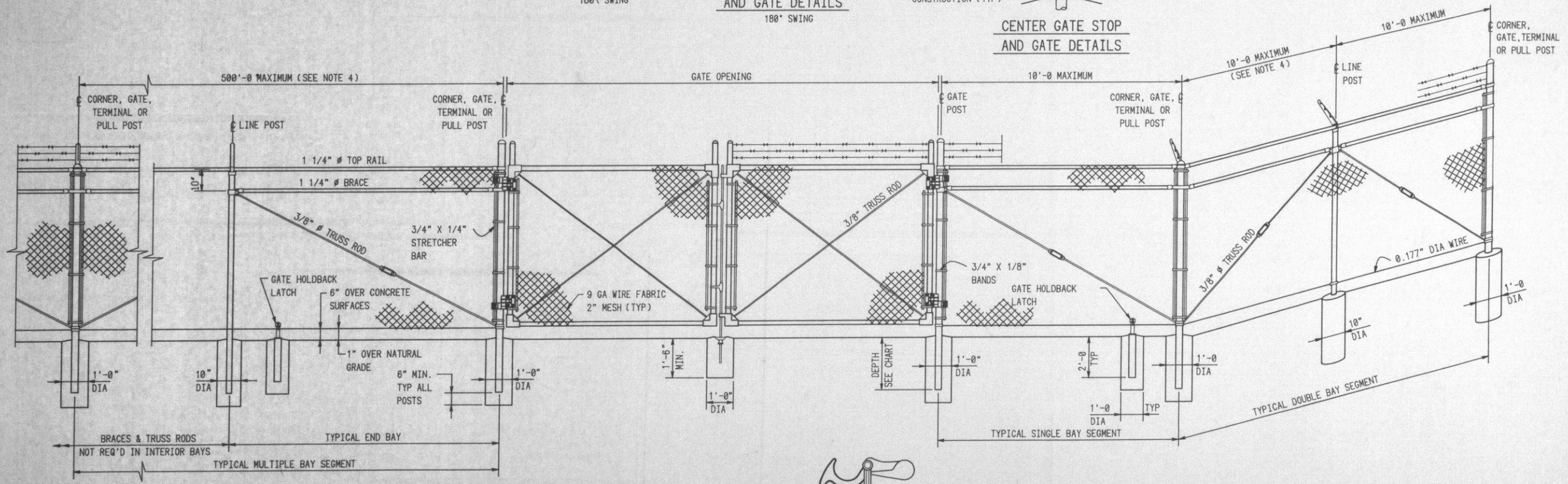
OPTIONAL WELDED
CONSTRUCTION
(TYP)

OPTIONAL RIVETED
CONSTRUCTION (TYP)



CENTER GATE STOP
AND GATE DETAILS

- NOTES
1. MATERIALS, CONSTRUCTION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
 2. ALL STEEL PIPE MEMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A-120, SCHEDULE 40, HOT DIPPED ZINC COATED STEEL PIPE.
 3. LINE POSTS SHALL BE LOCATED AT EQUAL SPACINGS FOR EACH SEGMENT WITH MAXIMUM SPACING AS FOLLOWS:
 - A. TANGENT SECTIONS TO 500 FEET RADIUS - NOT MORE THAN 10 FEET.
 - B. UNDER 500 FEET RADIUS TO 200 FEET RADIUS - NOT MORE THAN 8 FEET.
 - C. UNDER 200 FEET RADIUS TO 100 FEET RADIUS - NOT MORE THAN 6 FEET.
 - D. UNDER 100 FEET RADIUS - NOT MORE THAN 5 FEET.
 4. PULL POST SHALL BE PROVIDED AT NOT MORE THAN 500 FEET MAXIMUM INTERVALS.



GATE HOLDBACK LATCH
SIDE VIEW

HEIGHT OF FABRIC	DEPTH OF POSTS	LENGTH OF END, CORNER OR PULL POSTS	LENGTH OF LINE POSTS	SIZE OF POSTS		
				CORNER, END & PULL	LINE POSTS (MIN)	GATE POSTS
7'	3'	10'	9'-8"	2 1/2"	2"	
6'	3'	9'	8'-8"	2 1/2"	2"	
5'	3'	8'	7'-8"	2"	1 1/2"	
4'	2'	6'	5'-8"	2"	1 1/2"	
3'	2'	5'	4'-8"	2"	1 1/2"	

SEE GATE POST TABLE

GATES			
GATE POSTS AND GATE FRAMES			
HEIGHT	GATE OPENING	GATE POST	GATE FRAME
UNDER 6 FEET	SINGLE TO 6' OR DOUBLE TO 12'	2"	1"
	SINGLE OVER 6' TO 8' OR DOUBLE OVER 12' TO 16'	2 1/2"	1 1/2"
	SINGLE OVER 8' TO 12' OR DOUBLE 16' TO 24'	3 1/2"	
6 FEET AND OVER	SINGLE TO 6' OR DOUBLE TO 12'	2 1/2"	
	SINGLE OVER 6' TO 13' OR DOUBLE OVER 12' TO 24'	3 1/2"	1 1/2"
	SINGLE OVER 13' TO 18' OR DOUBLE OVER 24' TO 36'	6"	
	SINGLE OVER 18' OR DOUBLE OVER 36'	8"	

Ford, Bacon & Davis, Incorporated
ENGINEERS-CONSTRUCTORS
SALT LAKE CITY, UTAH



FLAMBEAU PROJECT
LADYSMITH, WISCONSIN

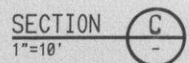
KENNECOTT MINERALS COMPANY
1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

FIGURE NO. 4-42
FENCING DETAILS

MICROFILM	JOB
	W6033R
DRAWING NO.	REV.
FM000-01-006	C
DIVISION DRAWING NO.	
OWNER OPERATED	
SCALE	NOTED



ELEVATION
OUTFALL 001
TYPICAL OUTFALL TO RIVER
N.T.S.



OUTFALL 002

DETAIL 1
1"=50' FM000-01-007

JFord, Bacon & Davis, Incorporated								FLAMBEAU PROJECT				MICROFILM		JOB	
ENGINEERS-CONSTRUCTORS								LADYSMITH, WISCONSIN						M6033R	
SALT LAKE CITY, UTAH												DRAWING NO.		REV.	
BY	CHK'D	ENGR	ENGR MGR		BY	DATE		KENNECOTT MINERALS COMPANY		FIGURE NO. 4-43		FM-000-01-015		1	
				PRG'D. ENGR		DESIGN		MINERALS COMPANY		SITE GRADING		DIVISION DRAWING NO.			
				MGR. PROCESS		DRAWN	GB	1515 MINERAL SQUARE		MISC. SECTIONS		OWNER OPERATED			
				ENGR		CHK'D		SALT LAKE CITY, UTAH				SCALE		NOTED	
				MGR		ENGR	GTK	84112							
						DES. ENGR	2/1/89								
						SECT ENGR									



BACK WASH STORAGE TANK
250-MDA-02 (9'6" x 12'6" H)
PUMP
250-NPP-025

CLARIFIER UNDERFLOW
STORAGE TANK
250-MDA-017 (10'6" x 15' H)

AGITATOR
250-NAG-010
PUMP
250-NPP-032

PUMP
250-NPP-05

SLOPE
FROM RUN-OFF POND

SAND FILTER
FEED TANK (10'6" x 14' H)
250-MDA-014

PUMP
250-NPP-017

Na₂S TANK 250-MDA-011 (5'6" x 4'6" H)
CONTAINMENT TANK 250-MDA-011A (6'6" x 4' H)
VENT

PUMP 250-NPP-018

Na₂S SUMP PUMP
250-NPP-021

Na₂S BAG BATCH TANK 250-MDA-010 (3'6" x 4'4" H)
CONTAINMENT TANK 250-MDA-010A (5'1" x 4'9" H)
VENT

AGITATOR 250-NAG-07

GUARD POST
(TYP.)

SERVICE TRANSFORMER
220-TBA-01

- LEGEND :
- UTILITY WATER STATIONS (4-PL'S)
 - FIRE EXTINGUISHER CLASS A,B,C (4-PL'S)
 - DRY CHEM. (2-PL'S)
 - HALON (2-PL'S)
 - EYE WASH STATION (2-PL'S)
 - TRACK SCALE MONITOR
 - CRUSHER OPERATION MONITOR
 - FIRE HOSE STATION (2-PL'S)
 - HVAC UNITS (3-PL'S)

WELL WATER TANK
250-MDA-015
(6'6" x 10' H)
PUMP 250-NPP-030

0 1 5 10 15 20

FM000-01-025

Jord, Bacon & Davis, Incorporated
ENGINEERS-CONSTRUCTORS
SALT LAKE CITY, UTAH



FLAMBEAU PROJECT
LADYSMITH, WISCONSIN

**KENNECOTT
MINERALS
COMPANY**

1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

FIGURE NO. 4-46
WASTEWATER TREATMENT PLANT
GENERAL ARRANGEMENT
PLAN

MICROFILM	JOB
ME033R	
DRAWING NO.	REV.
FM 000-01-024	0
DIVISION DRAWING NO.	
OWNER OPERATED	
SCALE	

4 SPACES @ 25'-0" = 100'-0"

CLAR.

CLARIFIER
250-NCL-01

CLARIFIER DRIVE WITH
LIET 250-NAG-01

CLARIFIER OVER FLOW
TANK

PUMP 250-NPP-027

CLARIFIER UNDER-
FLOW PUMPS
250-NPP-08 & 09

AGITATOR
250-NAG-02

NEUTRALIZING & MIXING TANK
250-MDA-04 (12'6" x 15'4" H)
PUMP 250-NPP-026

SOLIDS SEPERATOR
250-NSS-01

LIME HOPPER
TRUCK

LIME SILO
250-MAA-01

LIME SLAKER
250-NLS-01

GRIT CONVEYOR
250-NFH-03

LIME FEED SCREW CONV.
250-NFH-01

AGITATOR
250-NAG-03

MOL STORAGE TANK
250-MDA-05 (12'6" x 20' H)

PUMP
250-NPP-04

PUMP 250-NPP-06 & 07

PUMP 250-NPP-015

DILUTE H₂SO₄ TANK (4'4" x 5'4" x 5'1" x 4'9" H)
250-MDA-09/250-MDA-09A
(WITH CONTAINMENT SHELL & VENT)

AGITATOR
250-NAG-06

ACID SUMP PUMP
250-NPP-031

PUMP 250-NPP-014

H₂SO₄ TANK (6'6" x 7'1" x 7'8" x 3'0" H)
250-MDA-08/250-MDA-08A
(WITH CONTAINMENT SHELL & VENT)

ACID TANK TRUCK

POLYMER TANK TRUCK

PUMP 250-NPP-012 & 013

DILUTE POLYMER TANK
250-MDA-06

LOW SHEAR MIXER
250-NAG-04

PUMP 250-NPP-011

CONCENTRATED POLYMER TANK
250-MDA-07

AGITATOR
250-NAG-05

CATCH BASIN WITH DRAIN (TYP.)

PH NEUTRALIZATION TANK

250-MDA-01 (12'6" x 13' H)
PUMP (UTILITY) 250-NPP-019
PUMP (SAND FILT. BACKWASH) 250-NPP-020
PUMP (PROCESS WATER) 250-NPP-022
PUMP (RIVER OUTFALL) 250-NPP-024
PUMP (FIRE WATER) 250-NPP-033

AIR COMPRESSOR SYST.

250-NCP-01
2-AIR COMPRESSORS
1-PLANT AIR RECIEVER
1-INSTRUMENT AIR RECIEVER
1-AIR DRYER

SULFIDE MIXING TANK (FIBERGLASS)

250-MDA-012 (9'6" x 9' H)
AGITATOR
250-NAG-08

SULFIDE MIXING TANK (FIBERGLASS)

250-MDA-013 (9'6" x 9' H)
AGITATOR
250-NAG-09

SAND FILTER 3 TANK SYST.
250-NFL-02, 03, 04

FOREMANS
OFF.

CONTROL
ROOM

COMP.
ROOM

WASH DOWN
SUMP (3)

SLOPE
1/8" / FT
(TYP.)

TO MAINT. SHOP & LAB

FROM PUMP 250-NPP-023

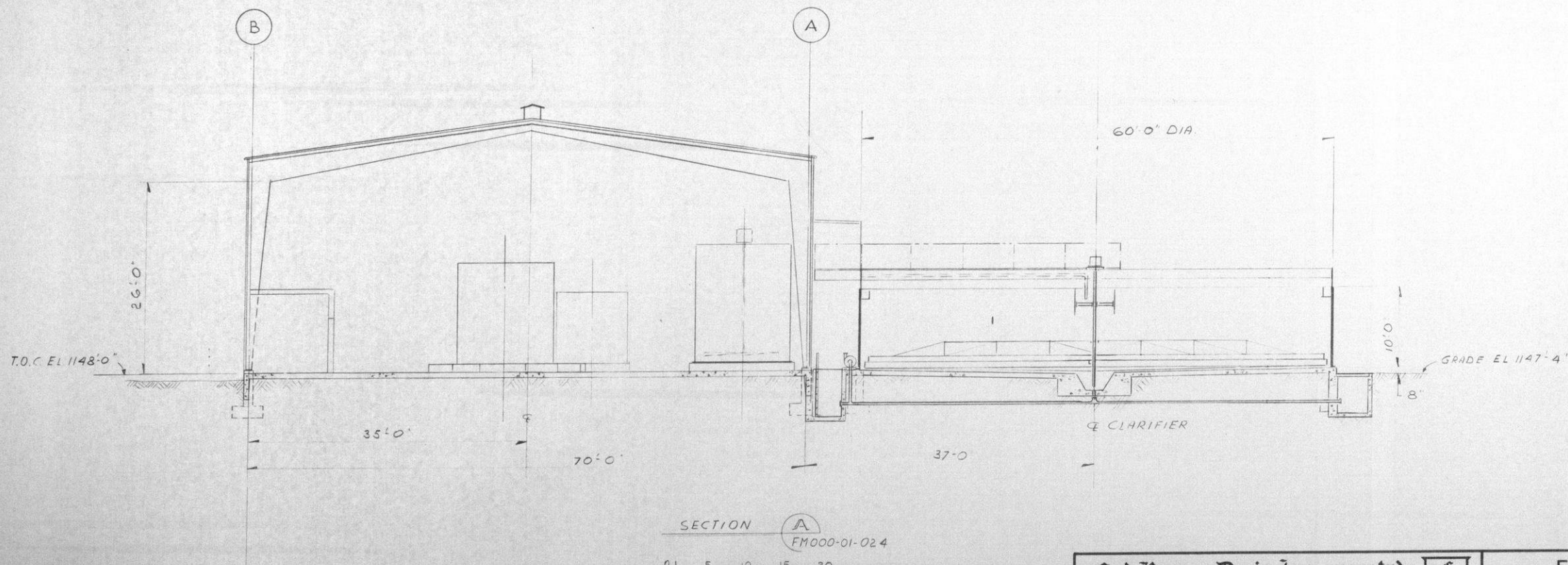
ELECTRICAL ROOM

6' x 10' DOOR

12' x 14' DOOR

12' x 14' DOOR

SLOPE



Ford, Bacon & Davis, Incorporated
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SALT LAKE CITY, UTAH



FLAMBEAU PROJECT
LADYSMITH, WISCONSIN

**KENNECOTT
MINERALS
COMPANY**

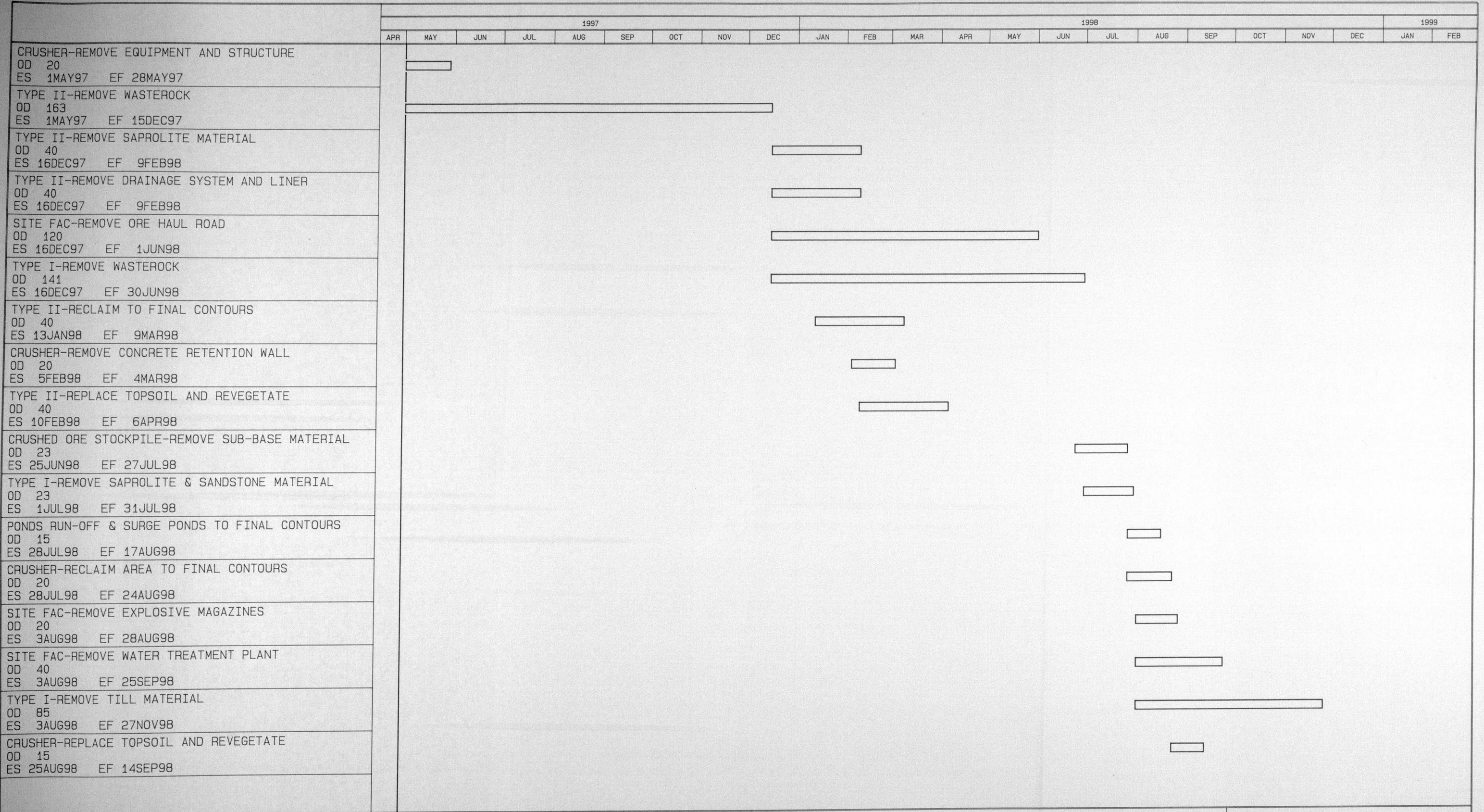
1515 MINERAL SQUARE
SALT LAKE CITY, UTAH
84112

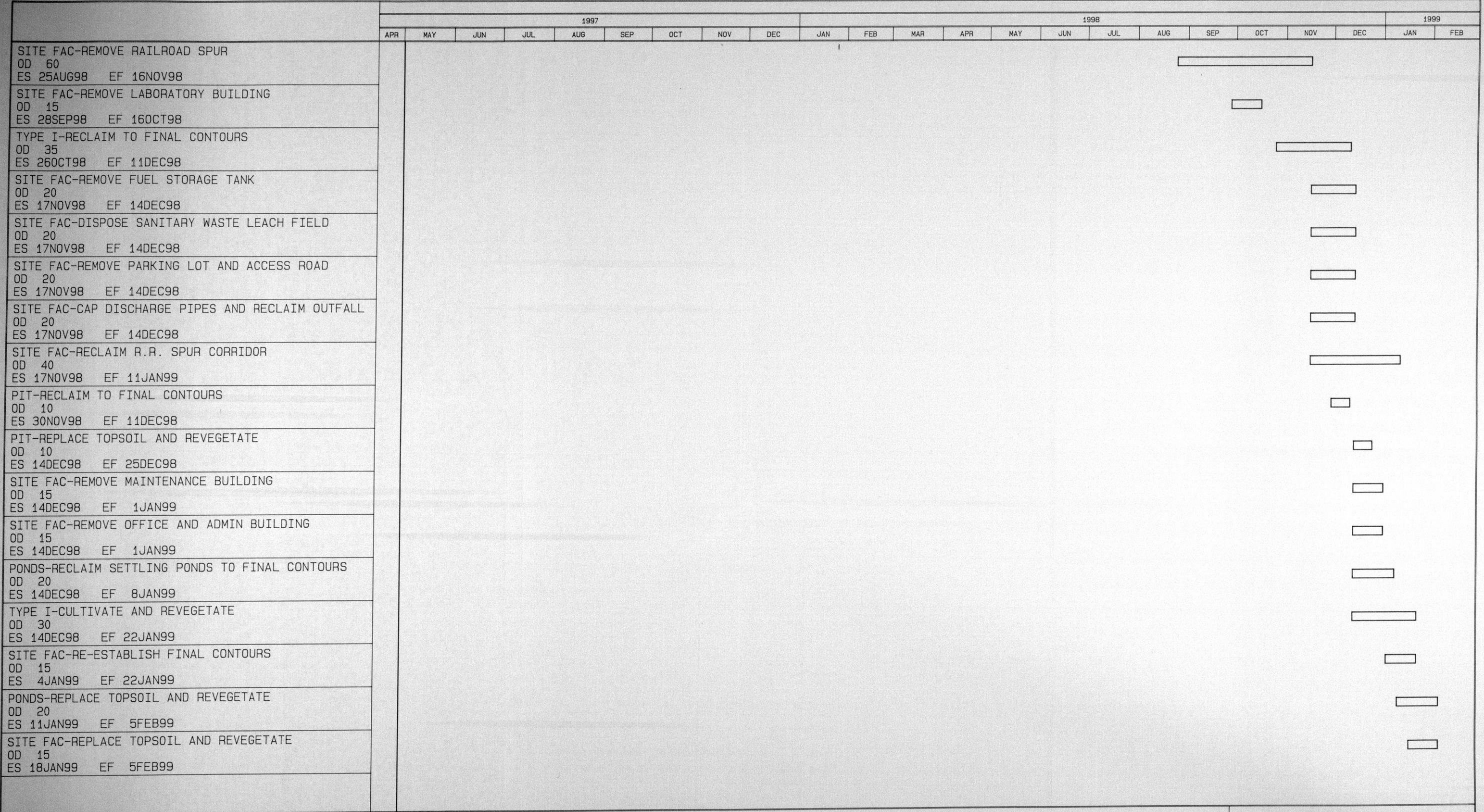
FIGURE NO. 4-47
WASTEWATER
TREATMENT PLANT ELEVATION

MICROFILM	JOB
	M6033R
DRAWING NO.	REV.
FM000-01-025	0
DIVISION DRAWING NO.	OWNER OPERATED
SCALE	

DWG. NO.	DESCRIPTION	BY	DATE	REVISIONS	BY	CHK'D	ENGR	ENGR	NO	DATE	REVISIONS	BY	CHK'D	ENGR	ENGR

BY	DATE	DESIGN	BY	DATE
246	2-1-89	DRAWN	RJD	12-17-88
		CHK'D	284	2-1-89
		DES. ENGR	246	2-1-89
		SECT ENGR		





43000 E



===== 1100 ===== EXISTING CONTOUR
 ----- EXISTING PAVED ROADWAY
 ----- EXISTING TRAIL/GRAVEL SURFACE
 ~~~~~ TREES AND/OR BRUSH  
 X X FENCE  
 [Symbol: Circle with crosshair] CONTROL MONUMENT  
 [Symbol: Thick black line] MINE SITE

1. SITE LOCATION: SECTIONS 9, 10, 15 & 16, T34N, R6W, RUSK COUNTY, WISCONSIN.
2. TOPOGRAPHIC BASE MAP PREPARED FROM AERIAL SURVEY BY SURDEX CORPORATION, CHESTERFIELD, MISSOURI, DATE OF PHOTOGRAPHY - APRIL 24, 1970.  
ROADS, TREES AND BUILDINGS WERE UPDATED AS PER AERIAL PHOTOGRAPH TAKEN BY MARKHURD CORPORATION, MINNEAPOLIS, MINNESOTA.  
DATE OF PHOTOGRAPHY - SEPTEMBER 14, 1987.
3. ELEVATIONS BASED ON MEAN SEA LEVEL DATUM.  
CONTOUR INTERVAL IS TWO FEET.
4. HORIZONTAL DATUM BASED ON PROJECT SITE GRID SYSTEM. SITE GRID COORDINATES CORRELATION TO STATE PLANE COORDINATES DERIVED AS FOLLOWS:

|                       |                    |
|-----------------------|--------------------|
| SITE GRID COORDINATES | STATE PLANE        |
| CONTROL MONUMENT F-1  | COORDINATES        |
| 40000 N =             | 587, 357.0087 N    |
| 40000 E =             | 1, 713, 516.1229 E |

THE ANGULAR ROTATION FROM STATE PLANE BEARINGS TO SITE GRID BEARINGS IS 359°13'-23" RIGHT WITH CONTROL POINT F-1 AS THE BASE POINT.
5. RAILROAD SPUR LINE CORRIDOR EAST OF STH 27 TO BE GRADED TO ITS APPROXIMATE ORIGINAL CONTOUR AS PART OF THIS GRADING PLAN.

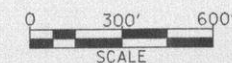


FIGURE NO. 5-3  
RECLAIMED SITE FINAL  
GRADING PLAN

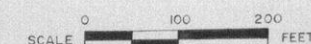
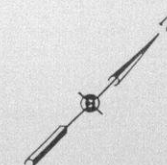
|                      |               |      |  |
|----------------------|---------------|------|--|
| MICROFILM            |               | JOB  |  |
| DRAWING NO.          |               | REV. |  |
| DIVISION DRAWING NO. |               |      |  |
| SCALE                | SEE BAR SCALE |      |  |

| REFERENCES | DWG. NO. | DESCRIPTION | REFERENCES | DWG. NO. | DESCRIPTION | NO. | DATE | REVISIONS | BY | CHK'D | ENGR | ENGR MGR | NO. | DATE | REVISIONS | BY | CHK'D | ENGR | ENGR MGR |  | BY           | DATE       |  | BY        | DATE |       |
|------------|----------|-------------|------------|----------|-------------|-----|------|-----------|----|-------|------|----------|-----|------|-----------|----|-------|------|----------|--|--------------|------------|--|-----------|------|-------|
|            |          |             |            |          |             |     |      |           |    |       |      |          |     |      |           |    |       |      |          |  | PROJ. ENGR   |            |  | DESIGN    |      |       |
|            |          |             |            |          |             |     |      |           |    |       |      |          |     |      |           |    |       |      |          |  | MGR. PROCESS |            |  | DRAWN     | MJO  | 12/89 |
|            |          |             |            |          |             |     |      |           |    |       |      |          |     |      |           |    |       |      |          |  | ENGR         |            |  | CHK'D     | GWS  | 12/89 |
|            |          |             |            |          |             |     |      |           |    |       |      |          |     |      |           |    |       |      |          |  | ENGR MGR.    |            |  |           |      |       |
|            |          |             |            |          |             |     |      |           |    |       |      |          |     |      |           |    |       |      |          |  |              |            |  | DES. ENGR |      |       |
|            |          |             |            |          |             |     |      |           |    |       |      |          |     |      |           |    |       |      |          |  |              | SECT. ENGR |  |           |      |       |









**PINCOCK, ALLEN & HOLT, INC.**  
LAKEWOOD, COLORADO

FLAMBEAU PROJECT  
LADYSMITH, WISCONSIN

**KENNECOTT  
MINERALS  
COMPANY**  
1515 MINERAL SQUARE  
SALT LAKE CITY, UTAH  
84112

FIGURE NO. 5-5  
END OF 3 MONTHS  
OF BACKFILLING

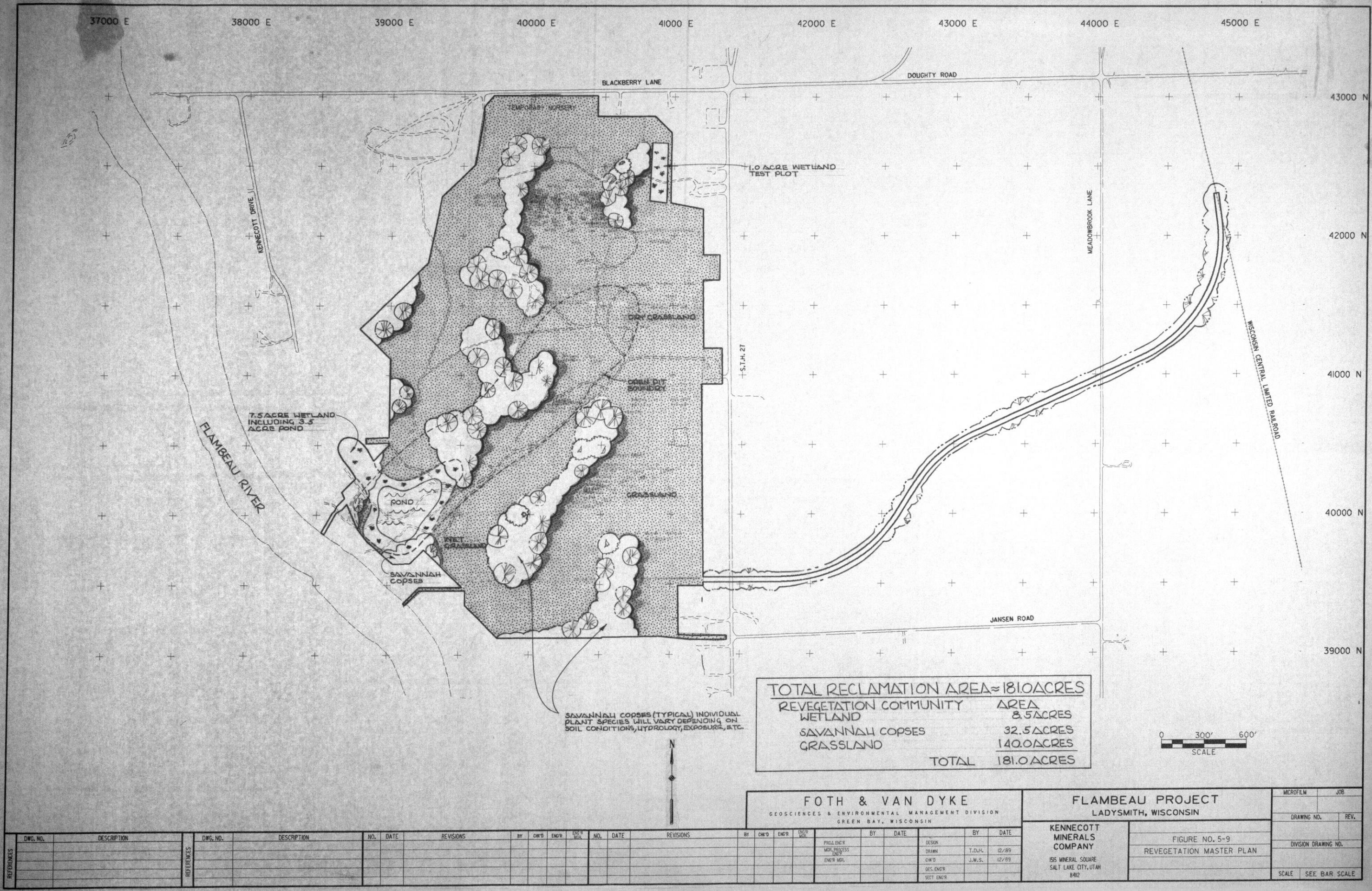
|                      |  |     |  |
|----------------------|--|-----|--|
| MICROFILM            |  | JOB |  |
|                      |  |     |  |
| DRAWING NO.          |  | REV |  |
|                      |  |     |  |
| DIVISION DRAWING NO. |  |     |  |
|                      |  |     |  |
| SCALE                |  |     |  |

[illegible]









|                                   |            |
|-----------------------------------|------------|
| TOTAL RECLAMATION AREA≈181.0ACRES |            |
| REVEGETATION COMMUNITY            | AREA       |
| WETLAND                           | 8.5ACRES   |
| SAVANNAH COPSES                   | 32.5ACRES  |
| GRASSLAND                         | 140.0ACRES |
| TOTAL                             | 181.0ACRES |

SAVANNAH COPSES (TYPICAL) INDIVIDUAL PLANT SPECIES WILL VARY DEPENDING ON SOIL CONDITIONS, HYDROLOGY, EXPOSURE, ETC.

FOTH & VAN DYKE  
GEOSCIENCES & ENVIRONMENTAL MANAGEMENT DIVISION  
GREEN BAY, WISCONSIN

FLAMBEAU PROJECT  
LADYSMITH, WISCONSIN

KENECOTT MINERALS COMPANY  
1515 MINERAL SQUARE  
SALT LAKE CITY, UTAH 8412

FIGURE NO. 5-9  
REVEGETATION MASTER PLAN

|                      |               |
|----------------------|---------------|
| MICROFILM            | JOB           |
| DRAWING NO.          | REV.          |
| DIVISION DRAWING NO. |               |
| SCALE                | SEE BAR SCALE |

REFERENCES

| DWG. NO. | DESCRIPTION |
|----------|-------------|
|          |             |
|          |             |
|          |             |

REFERENCES

| DWG. NO. | DESCRIPTION | NO. | DATE | REVISIONS | BY | CHK'D | ENGR | ENGR NO. | NO. | DATE | REVISIONS |
|----------|-------------|-----|------|-----------|----|-------|------|----------|-----|------|-----------|
|          |             |     |      |           |    |       |      |          |     |      |           |
|          |             |     |      |           |    |       |      |          |     |      |           |
|          |             |     |      |           |    |       |      |          |     |      |           |

| BY | CHK'D | ENGR | ENGR NO. | BY | DATE | BY | DATE |
|----|-------|------|----------|----|------|----|------|
|    |       |      |          |    |      |    |      |
|    |       |      |          |    |      |    |      |
|    |       |      |          |    |      |    |      |

PROJ. ENGR  
MGR. PROCESS  
ENGR MGR.

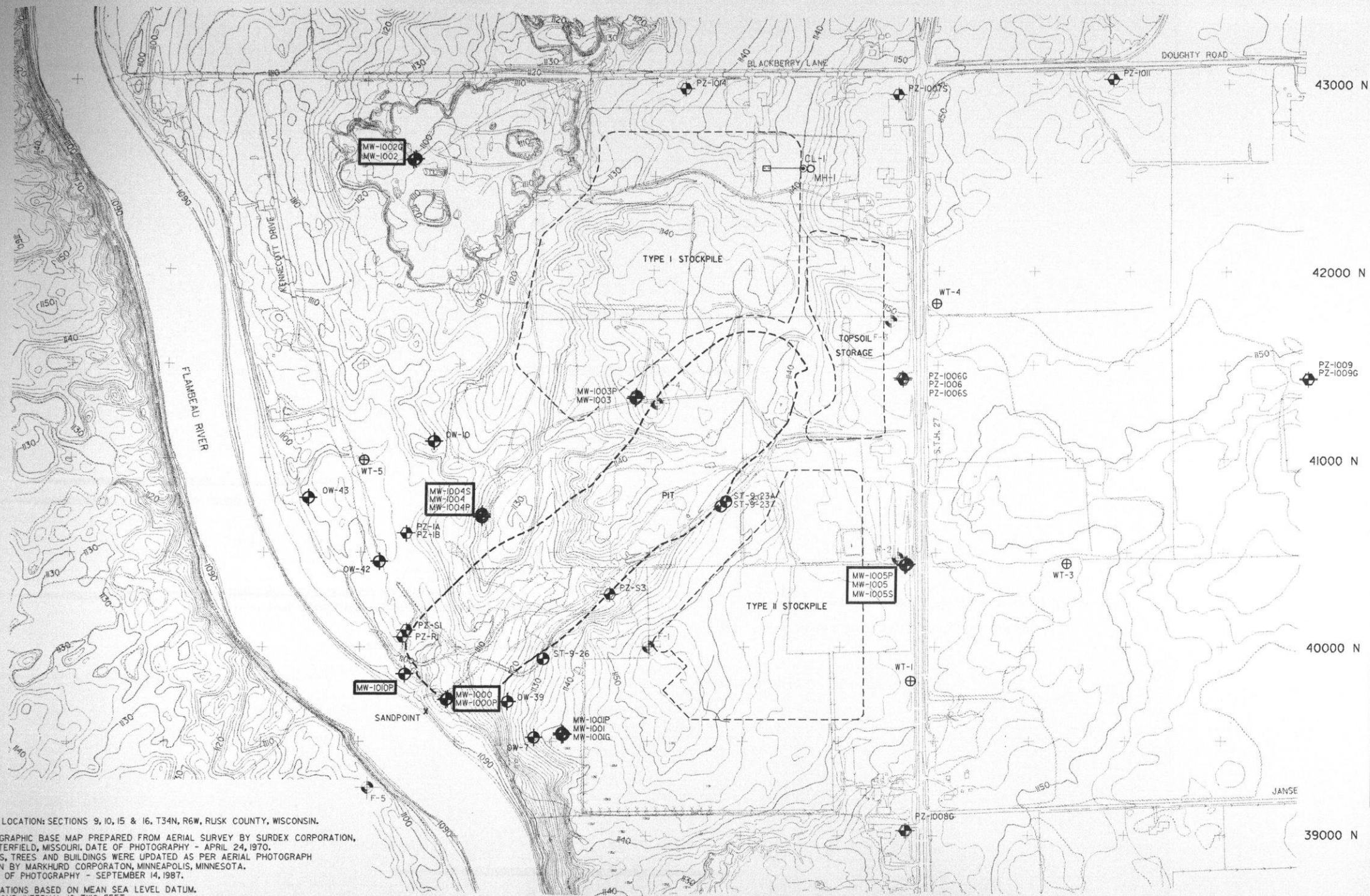
DESIGN  
DRAWN  
CHK'D  
DES. ENGR  
SECT. ENGR

T.D.H.  
J.W.S.

12/89  
12/89



37000 E 38000 E 39000 E 40000 E 41000 E 42000 E 43000 E



NOTES:

1. SITE LOCATION: SECTIONS 9, 10, 15 & 16, T34N, R6W, RUSK COUNTY, WISCONSIN.
2. TOPOGRAPHIC BASE MAP PREPARED FROM AERIAL SURVEY BY SURDEX CORPORATION, CHESTERFIELD, MISSOURI, DATE OF PHOTOGRAPHY - APRIL 24, 1970. ROADS, TREES AND BUILDINGS WERE UPDATED AS PER AERIAL PHOTOGRAPH TAKEN BY MARKHURD CORPORATION, MINNEAPOLIS, MINNESOTA. DATE OF PHOTOGRAPHY - SEPTEMBER 14, 1987.
3. ELEVATIONS BASED ON MEAN SEA LEVEL DATUM. CONTOUR INTERVAL IS TWO FEET.
4. HORIZONTAL DATUM BASED ON PROJECT SITE GRID SYSTEM. SITE GRID COORDINATES CORRELATION TO STATE PLANE COORDINATES DERIVED AS FOLLOWS:  
SITE GRID COORDINATES STATE PLANE COORDINATES  
CONTROL MONUMENT F-1 587,357.8087 N  
40000 N = 1,713,516.1229 E  
40000 E =  
THE ANGULAR ROTATION FROM STATE PLANE BEARINGS TO SITE GRID BEARINGS IS 359°13'23" RIGHT WITH CONTROL POINT F-1 AS THE BASE POINT.
5. SEE FIGURE NO.'S 7-1 AND 7-7 FOR THE LOCATION OF WETLAND STAFF GAUGE WT-2 AND FOR SURFACE WATER MONITORING LOCATIONS.

- LEGEND
- EXISTING CONTOUR
  - EXISTING PAVED ROADWAY
  - EXISTING TRAIL/GRAVEL SURFACE
  - TREES AND/OR BRUSH
  - FENCE
  - CONTROL MONUMENT
  - MW-1005 MONITORING WELL
  - PZ-R3 PIEZOMETER
  - MW-1005 WELL ON THE WATER QUALITY MONITORING PROGRAM
  - WT-5 WETLAND STAFF GAUGE

0 300' 600'  
SCALE

FOTH & VAN DYKE  
GEOSCIENCES & ENVIRONMENTAL MANAGEMENT DIVISION  
GREEN BAY, WISCONSIN

FLAMBEAU PROJECT  
LADYSMITH, WISCONSIN

KENNECOTT  
MINERALS  
COMPANY  
155 MINERAL SQUARE  
SALT LAKE CITY, UTAH  
84142

FIGURE NO. 7-1  
CONSTRUCTION AND OPERATION  
GROUNDWATER AND COLLECTION  
LYSIMETER MONITORING PROGRAM

| MICROFILM            |               | JOB |
|----------------------|---------------|-----|
| DRAWING NO.          | REV.          |     |
| DIVISION DRAWING NO. |               |     |
| SCALE                | SEE BAR SCALE |     |

| GROUNDWATER AND COLLECTION LYSIMETER<br>CONSTRUCTION AND OPERATION MONITORING PROGRAM |                                                |                   |            |
|---------------------------------------------------------------------------------------|------------------------------------------------|-------------------|------------|
| COLLECTION LYSIMETER/<br>WELL/PIEZOMETER<br>NUMBER                                    | ELEVATION OF<br>SCREENED INTERVAL<br>(FT. MSL) | GEOLOGIC<br>UNIT  | PARAMETER* |
| MW-1000                                                                               | 1091-1081                                      | PRECAMBRIAN, TILL | 1, 2       |
| MW-1000P                                                                              | 1049-1044                                      | PRECAMBRIAN       | 1, 2       |
| MW-1001                                                                               | 1118-1108                                      | TILL              | 1          |
| MW-1001G                                                                              | 1095-1090                                      | TILL, SANDSTONE   | 1          |
| MW-1001P                                                                              | 1051-1046                                      | PRECAMBRIAN       | 1          |
| MW-1002                                                                               | 1096-1086                                      | SAND & GRAVEL     | 1, 2       |
| MW-1002G                                                                              | 1055-1050                                      | SAND & GRAVEL     | 1, 2       |
| MW-1003                                                                               | 1113-1103                                      | SANDSTONE         | 1          |
| MW-1003P                                                                              | 1062-1057                                      | PRECAMBRIAN       | 1          |
| MW-1004                                                                               | 1112-1102                                      | SAND & GRAVEL     | 1, 2       |
| MW-1004S                                                                              | 1093-1088                                      | SANDSTONE         | 1, 2       |
| MW-1004P                                                                              | 1042-1037                                      | PRECAMBRIAN       | 1, 2       |
| MW-1005                                                                               | 1134-1124                                      | TILL              | 1, 2       |
| MW-1005S                                                                              | 1097-1092                                      | SANDSTONE         | 1, 2       |
| MW-1005P                                                                              | 1056-1051                                      | PRECAMBRIAN       | 1, 2       |
| PZ-1006                                                                               | 1143-1138                                      | TILL              | 1          |
| PZ-1006G                                                                              | 1119-1114                                      | TILL              | 1          |
| PZ-1006S                                                                              | 1101-1096                                      | SANDSTONE         | 1          |
| PZ-1007S                                                                              | 1110-1105                                      | SANDSTONE         | 1          |
| PZ-1008                                                                               | 1138-1128                                      | TILL              | 1          |
| PZ-1008G                                                                              | 1096-1091                                      | SAND & GRAVEL     | 1          |
| PZ-1009                                                                               | 1144-1134                                      | TILL              | 1          |
| PZ-1009G                                                                              | 1107-1102                                      | TILL              | 1          |
| MW-1010P                                                                              | 995- 990                                       | PRECAMBRIAN       | 1, 2       |
| PZ-1011                                                                               | 1114-1104                                      | TILL              | 1          |
| PZ-1012                                                                               | 1111-1101                                      | TILL              | 1          |
| PZ-R1                                                                                 | 901- 881                                       | PRECAMBRIAN       | 1          |
| PZ-S1                                                                                 | 1067-1062                                      | PRECAMBRIAN       | 1          |
| PZ-S3                                                                                 | 1100-1095                                      | SANDSTONE         | 1          |
| SANDPOINT                                                                             | 1084-1082                                      | SAND & GRAVEL     | 1          |
| ST-9-23                                                                               | 1106-1101                                      | SANDSTONE         | 1          |
| ST-9-23A                                                                              | 1125-1120                                      | SAND & GRAVEL     | 1          |
| ST-9-26                                                                               | 1106-1101                                      | TILL              | 1          |
| PZ-1A                                                                                 | 1093-1097                                      | SAND & GRAVEL     | 1          |
| PZ-1B                                                                                 | 1103-1101                                      | SAND & GRAVEL     | 1          |
| OW-7                                                                                  | 1088-1078                                      | TILL              | 1          |
| OW-10                                                                                 | 1069-1059                                      | TILL              | 1          |
| OW-39                                                                                 | 1107-1073                                      | TILL              | 1          |
| OW-42                                                                                 | 1090-1058                                      | SAND & GRAVEL     | 1          |
| OW-43                                                                                 | 1090-1022                                      | SAND & GRAVEL     | 1          |
| CL-1                                                                                  | N.A.                                           | N.A.              | 3          |

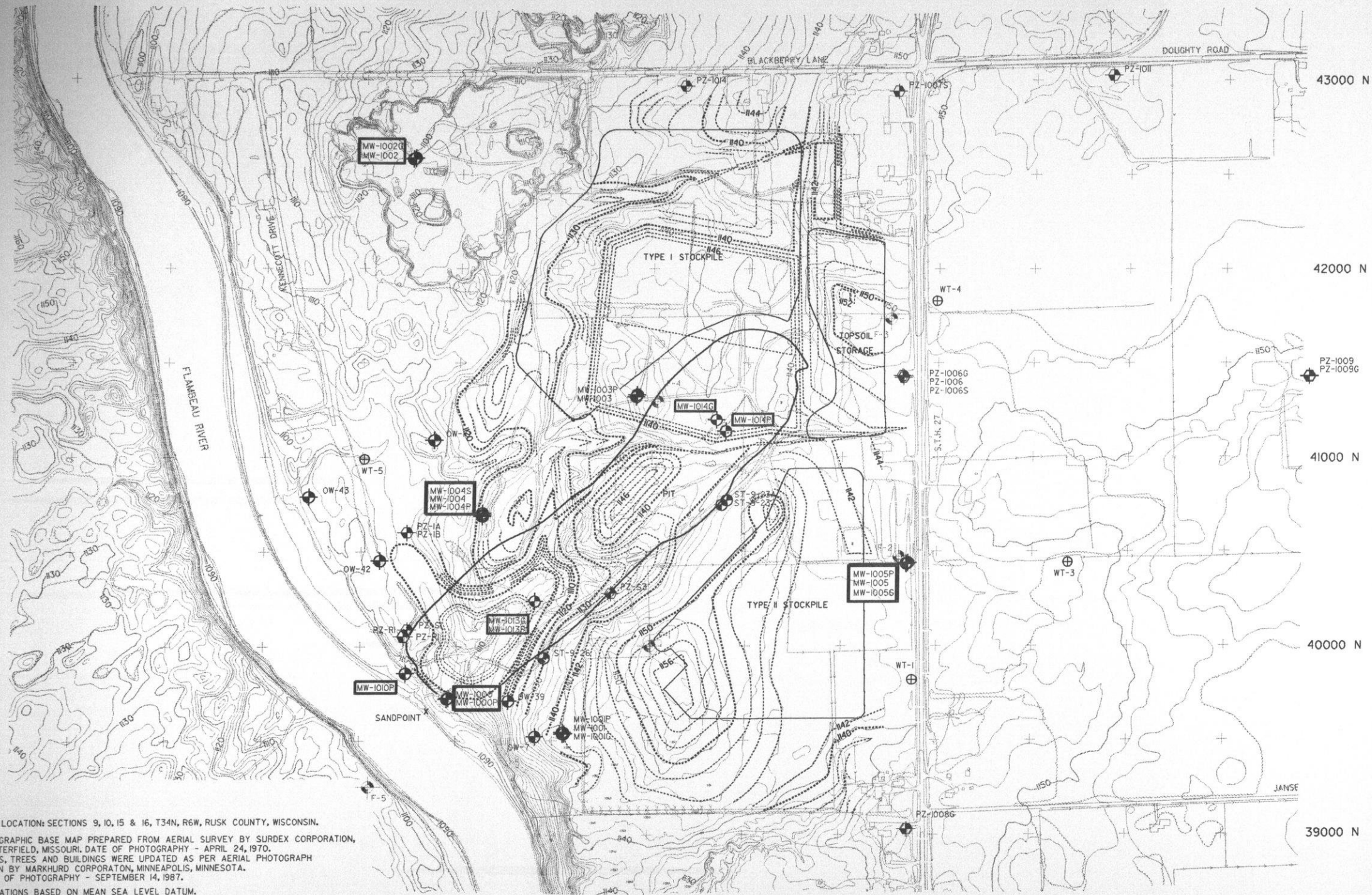
\*1 GROUNDWATER ELEVATION (QUARTERLY).

\*2 SPECIFIC CONDUCTIVITY (FIELD), PH (FIELD AND LAB), TDS, IRON, MANGANESE, SULFATE, COPPER, TOTAL ALKALINITY, TOTAL HARDNESS (ALL QUARTERLY).

\*3 PH (FIELD AND LAB), SPECIFIC CONDUCTANCE (FIELD), TOTAL CHROMIUM, COPPER, IRON, MANGANESE, SULFATE, TOTAL DISSOLVED SOLIDS, TOTAL ALKALINITY, TOTAL HARDNESS, VOLUME OF LIQUID REMOVED (ALL QUARTERLY).



37000 E 38000 E 39000 E 40000 E 41000 E 42000 E 43000 E



NOTES:

1. SITE LOCATION: SECTIONS 9, 10, 15 & 16, T34N, R6W, RUSK COUNTY, WISCONSIN.
2. TOPOGRAPHIC BASE MAP PREPARED FROM AERIAL SURVEY BY SURDEX CORPORATION, CHESTERFIELD, MISSOURI, DATE OF PHOTOGRAPHY - APRIL 24, 1970. ROADS, TREES AND BUILDINGS WERE UPDATED AS PER AERIAL PHOTOGRAPH TAKEN BY MARKHURD CORPORATION, MINNEAPOLIS, MINNESOTA. DATE OF PHOTOGRAPHY - SEPTEMBER 14, 1987.
3. ELEVATIONS BASED ON MEAN SEA LEVEL DATUM. CONTOUR INTERVAL IS TWO FEET.
4. HORIZONTAL DATUM BASED ON PROJECT SITE GRID SYSTEM. SITE GRID COORDINATES CORRELATION TO STATE PLANE COORDINATES DERIVED AS FOLLOWS:  
SITE GRID COORDINATES STATE PLANE COORDINATES  
CONTROL MONUMENT F-1 587, 357.8087 N  
40000 E = 1, 713, 516.1229 E  
THE ANGULAR ROTATION FROM STATE PLANE BEARINGS TO SITE GRID BEARINGS IS 359°-13'-23" RIGHT WITH CONTROL POINT F-1 AS THE BASE POINT.
5. SEE FIGURE NO.'S 7-1 AND 7-7 FOR THE LOCATION OF WETLAND STAFF GAUGE WT-2 AND FOR SURFACE WATER MONITORING LOCATIONS.

- LEGEND
- 100 --- EXISTING CONTOUR
  - ===== EXISTING PAVED ROADWAY
  - EXISTING TRAIL/GRAVEL SURFACE
  - ~~~~~ TREES AND/OR BRUSH
  - - - - - FENCE
  - ⊕ F-1 CONTROL MONUMENT
  - ⊕ MW-1005 MONITORING WELL
  - ⊕ PZ-1003 PIEZOMETER
  - ⊕ MW-1005 WELL ON THE WATER QUALITY MONITORING PROGRAM
  - ⊕ WT-5 WETLAND STAFF GAUGE

0 300' 600'  
SCALE

FOTH & VAN DYKE  
GEOSCIENCES & ENVIRONMENTAL MANAGEMENT DIVISION  
GREEN BAY, WISCONSIN

FLAMBEAU PROJECT  
LADYSMITH, WISCONSIN

KENNECOTT  
MINERALS  
COMPANY  
655 MINERAL SQUARE  
SALT LAKE CITY, UTAH  
8412

FIGURE NO. 10-1  
LONG TERM CARE  
AND MAINTENANCE PLAN

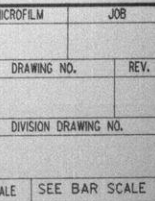
|                      |               |
|----------------------|---------------|
| MICROFILM            | JOB           |
| DRAWING NO.          | REV.          |
| DIVISION DRAWING NO. |               |
| SCALE                | SEE BAR SCALE |

40 YEAR LONG TERM CARE AND MAINTENANCE PLAN

|                                                                                                                                                                                                                                                                                                        | TIMES PER YEAR                                                                                                                                | DURATION                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| 1. INSPECTIONS<br>INSPECT RECLAIMED SITE FOR EROSION, VEGETATION GROWTH, SETTLING, AND MONITORING DEVICE INTEGRITY                                                                                                                                                                                     |                                                                                                                                               |                                                                                    |
| PHASE I                                                                                                                                                                                                                                                                                                | SPRING & FALL                                                                                                                                 | 4 YEARS                                                                            |
| PHASE II                                                                                                                                                                                                                                                                                               | LATE SUMMER                                                                                                                                   | 36 YEARS                                                                           |
| 2. MAINTENANCE                                                                                                                                                                                                                                                                                         |                                                                                                                                               |                                                                                    |
| A. LANDFORM                                                                                                                                                                                                                                                                                            | AS NEEDED                                                                                                                                     | 40 YEARS                                                                           |
| B. VEGETATION                                                                                                                                                                                                                                                                                          | AS NEEDED                                                                                                                                     | 40 YEARS                                                                           |
| C. MONITORING DEVICE                                                                                                                                                                                                                                                                                   | AS NEEDED                                                                                                                                     | 40 YEARS                                                                           |
| 3. GROUNDWATER MONITORING                                                                                                                                                                                                                                                                              |                                                                                                                                               |                                                                                    |
| A. OUTSIDE BACKFILLED PIT<br>WELL NESTS-MW-1000, 1002, 1004, 1005<br>WELL-MW-1010P                                                                                                                                                                                                                     | QUARTERLY <sup>1</sup><br>ANNUALLY <sup>2</sup>                                                                                               | 40 YEARS                                                                           |
| B. INSIDE BACKFILLED PIT<br>WELL NESTS - 1013&1014                                                                                                                                                                                                                                                     |                                                                                                                                               |                                                                                    |
| PHASE I                                                                                                                                                                                                                                                                                                | QUARTERLY <sup>2</sup><br>ANNUALLY <sup>2</sup>                                                                                               | 2 YEARS                                                                            |
| PHASE II                                                                                                                                                                                                                                                                                               | ANNUALLY (JUNE) <sup>1&amp;2</sup>                                                                                                            | SEE FOOTNOTE 3                                                                     |
| PHASE III                                                                                                                                                                                                                                                                                              | EVERY FIFTH YEAR (JUNE) <sup>1&amp;2</sup>                                                                                                    | REMAINDER OF PERIOD                                                                |
| C. WATER LEVELS                                                                                                                                                                                                                                                                                        |                                                                                                                                               |                                                                                    |
| PHASE I                                                                                                                                                                                                                                                                                                | QUARTERLY <sup>4</sup>                                                                                                                        | UNTIL WATER LEVELS STABILIZE                                                       |
| PHASE II                                                                                                                                                                                                                                                                                               | QUARTERLY <sup>5</sup>                                                                                                                        | REMAINDER OF PERIOD                                                                |
| 4. SURFACE WATER <sup>6</sup>                                                                                                                                                                                                                                                                          |                                                                                                                                               |                                                                                    |
| A. SEDIMENTS, MACROINVERTEBRATES & FISH                                                                                                                                                                                                                                                                |                                                                                                                                               |                                                                                    |
| PHASE I (GRAY FISH ONLY)                                                                                                                                                                                                                                                                               | ANNUALLY                                                                                                                                      | 2 YEARS                                                                            |
| PHASE II (FISH ONLY)                                                                                                                                                                                                                                                                                   | ONCE                                                                                                                                          | UNTIL ISSUANCE OF NOTICE OF COMPLETION IN YEAR CERTIFICATE OF COMPLETION IS ISSUED |
| B. WATER QUALITY                                                                                                                                                                                                                                                                                       | THREE IN TWO YEAR PERIOD                                                                                                                      | 2 YEARS                                                                            |
| C. WETLAND SURFACE FLOWS <sup>7</sup>                                                                                                                                                                                                                                                                  | SPRING, SUMMER & AUTUMN                                                                                                                       | UNTIL WATER LEVELS STABILIZE                                                       |
| 5. VEGETATION & WILDLIFE                                                                                                                                                                                                                                                                               |                                                                                                                                               |                                                                                    |
| A. PERCENT COVER                                                                                                                                                                                                                                                                                       | SEE FOOTNOTE 8                                                                                                                                | UNTIL ISSUANCE OF CERTIFICATE OF COMPLETION                                        |
| B. BIOMASS                                                                                                                                                                                                                                                                                             | SEE FOOTNOTE 8                                                                                                                                | UNTIL ISSUANCE OF CERTIFICATE OF COMPLETION                                        |
| C. DIVERSITY                                                                                                                                                                                                                                                                                           | SEE FOOTNOTE 8                                                                                                                                | UNTIL ISSUANCE OF CERTIFICATE OF COMPLETION                                        |
| D. SURVIVORSHIP OF WOODY PLANT STOCK                                                                                                                                                                                                                                                                   | SEE FOOTNOTE 8                                                                                                                                | UNTIL ISSUANCE OF CERTIFICATE OF COMPLETION                                        |
| E. WETLAND VEGETATION                                                                                                                                                                                                                                                                                  | SEE FOOTNOTE 8                                                                                                                                | UNTIL ISSUANCE OF CERTIFICATE OF COMPLETION                                        |
| F. HABITAT EVALUATION                                                                                                                                                                                                                                                                                  | SEE FOOTNOTE 8                                                                                                                                | UNTIL ISSUANCE OF CERTIFICATE OF COMPLETION                                        |
| 6. TERRESTRIAL ECOLOGY                                                                                                                                                                                                                                                                                 |                                                                                                                                               |                                                                                    |
| PHASE I                                                                                                                                                                                                                                                                                                | ANNUALLY (LATE SUMMER) <sup>9</sup>                                                                                                           | 4 YEARS                                                                            |
| PHASE II                                                                                                                                                                                                                                                                                               | EVERY FIVE YEARS (LATE SUMMER) <sup>9</sup>                                                                                                   | 35 YEARS                                                                           |
| 1 PARAMETERS:                                                                                                                                                                                                                                                                                          | SPECIFIC CONDUCTANCE (FIELD), PH (FIELD AND LAB), TOTAL DISSOLVED SOLIDS, TOTAL ALKALINITY, TOTAL HARDNESS, IRON, MANGANESE, COPPER, SULFATE. |                                                                                    |
| 2 PARAMETERS:                                                                                                                                                                                                                                                                                          | ARSENIC, BARIUM, CADMIUM, TOTAL CHROMIUM, LEAD, MERCURY, SELENIUM, SILVER, ZINC (JUNE QUARTERLY ROUND).                                       |                                                                                    |
| 3 ANNUAL SAMPLING WILL CONTINUE UNTIL WATER LEVELS IN MW-1013P AND 1014P INDICATE THAT WATER LEVELS HAVE RISEN TO BOTTOM OF SAPROLITE LAYER IN THE BACKFILLED PIT.                                                                                                                                     |                                                                                                                                               |                                                                                    |
| 4 LOCATIONS:                                                                                                                                                                                                                                                                                           | SEE TABLE NO. 7-1 OF REPORT.                                                                                                                  |                                                                                    |
| 5 LOCATIONS:                                                                                                                                                                                                                                                                                           | WELL NESTS MW-1000, 1002, 1004 AND 1005. WELL MW-1010P.                                                                                       |                                                                                    |
| 6 SEE SECTION 7.4 OF REPORT FOR SAMPLING LOCATIONS AND ANALYTICAL PARAMETERS.                                                                                                                                                                                                                          |                                                                                                                                               |                                                                                    |
| 7 MONITORING TO BE CONDUCTED ONLY IF WATER LEVEL MEASUREMENTS DURING THE CONSTRUCTION AND OPERATION MONITORING PROGRAM INDICATE A SIGNIFICANT DRAWDOWN EFFECT ON A MONITORED WETLAND WHICH IS ATTRIBUTABLE TO THE PROJECT.                                                                             |                                                                                                                                               |                                                                                    |
| 8 AT DISCRETION OF APPLICANT TO DEMONSTRATE THAT MINIMUM STANDARDS HAVE BEEN MET BEFORE ISSUANCE OF NOTICE OF COMPLETION OF RECLAMATION BY THE APPLICANT AND ISSUANCE OF CERTIFICATE OF COMPLETION OF RECLAMATION BY WDNR. SEE SECTION 5.11 OF REPORT FOR MINIMUM STANDARDS AND MONITORING PROCEDURES. |                                                                                                                                               |                                                                                    |
| 9 AERIAL AND COLOR INFRARED PHOTOGRAPHY.                                                                                                                                                                                                                                                               |                                                                                                                                               |                                                                                    |



45000 E



| REFERENCES | DWG. NO. | DESCRIPTION | REFERENCES | DWG. NO. | DESCRIPTION | NO. | DATE | REVISIONS | BY | CHK'D | ENGR | ENGR MOR | NO. | DATE  | REVISIONS         | BY     | CHK'D  | ENGR | ENGR MOR | PROJ. ENGR<br>MOR. PROCESS<br>ENGR<br>ENGR MOR. | BY | DATE       |        | BY    | DATE |
|------------|----------|-------------|------------|----------|-------------|-----|------|-----------|----|-------|------|----------|-----|-------|-------------------|--------|--------|------|----------|-------------------------------------------------|----|------------|--------|-------|------|
|            |          |             |            |          |             |     |      |           |    |       |      |          |     |       |                   |        |        |      |          |                                                 |    |            |        |       |      |
|            |          |             |            |          |             |     |      |           |    |       |      |          |     | 12/89 | UPDATED SITE PLAN | M.J.O. | J.W.S. |      |          |                                                 |    |            | DESIGN |       |      |
|            |          |             |            |          |             |     |      |           |    |       |      |          |     |       |                   |        |        |      |          |                                                 |    | DRAWN      | M.J.O. | 12/89 |      |
|            |          |             |            |          |             |     |      |           |    |       |      |          |     |       |                   |        |        |      |          |                                                 |    | CHK'D      | J.W.S. | 12/89 |      |
|            |          |             |            |          |             |     |      |           |    |       |      |          |     |       |                   |        |        |      |          |                                                 |    | DES. ENGR  |        |       |      |
|            |          |             |            |          |             |     |      |           |    |       |      |          |     |       |                   |        |        |      |          |                                                 |    | SECT. ENGR |        |       |      |

KENNEDY  
MINERALS  
COMPANY

1515 MINERAL SQUARE  
SALT LAKE CITY, UTAH  
8412

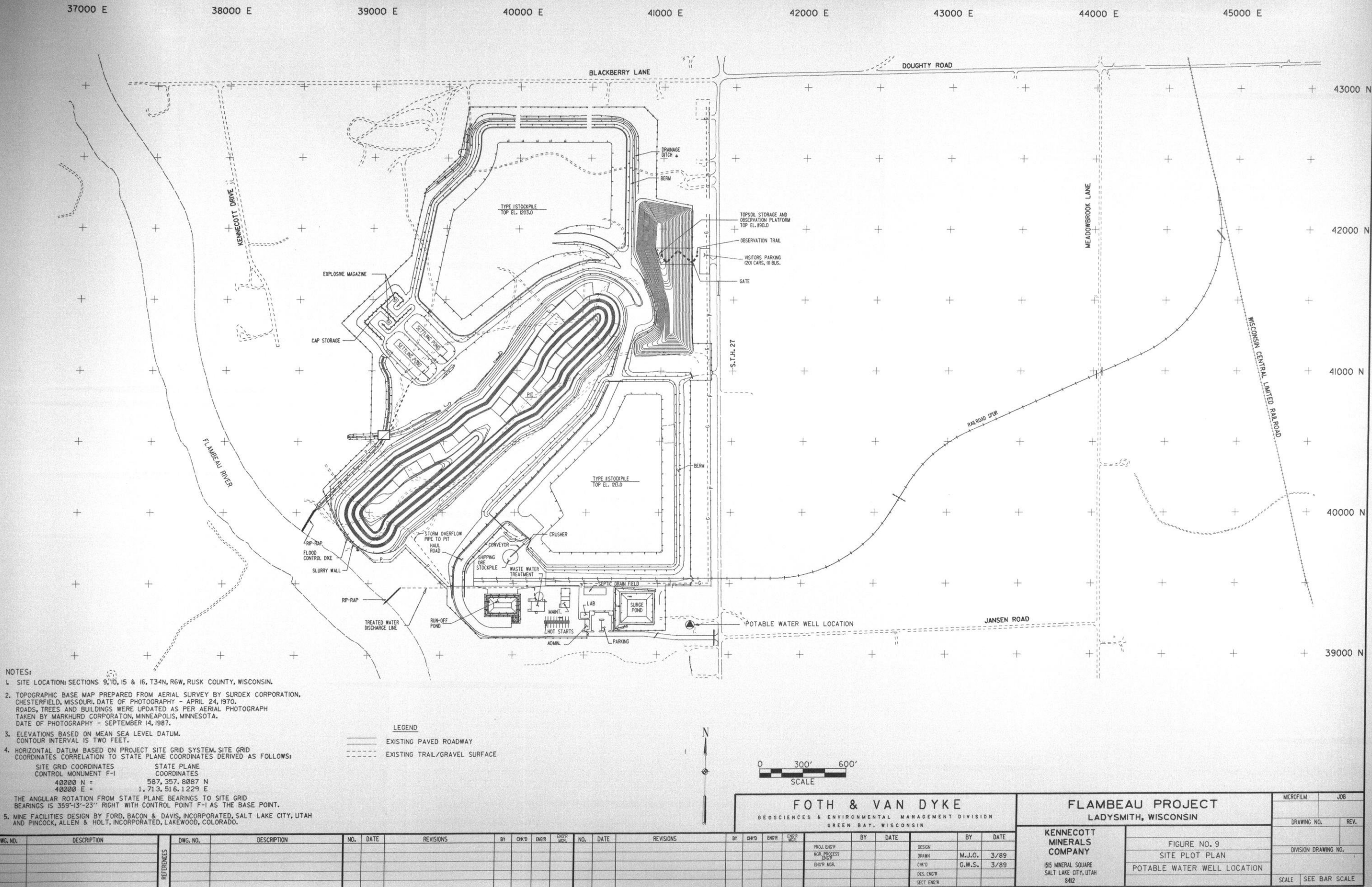
FIGURE NO. 1

SITE PLOT PLAN

DIVISION DRAWING NO.

SCALE SEE BAR SCALE











**Ford, Bacon & Davis, Incorporated**  
ENGINEERS-CONSTRUCTORS  
SALT LAKE CITY, UTAH

[illegible]







37000 E

38000 E

39000 E

40000 E

41000 E

42000 E

43000 E

44000 E

45000 E



## NOTES:

1. SITE LOCATION: SECTIONS 9, 10, 15 & 16, T34N, R6W, RUSK COUNTY, WISCONSIN.
2. TOPOGRAPHIC BASE MAP PREPARED FROM AERIAL SURVEY BY SURDEX CORPORATION, CHESTERFIELD, MISSOURI. DATE OF PHOTOGRAPHY - APRIL 24, 1970. ROADS, TREES AND BUILDINGS WERE UPDATED AS PER AERIAL PHOTOGRAPH TAKEN BY MARKHURD CORPORATION, MINNEAPOLIS, MINNESOTA. DATE OF PHOTOGRAPHY - SEPTEMBER 14, 1987.
3. ELEVATIONS BASED ON MEAN SEA LEVEL DATUM. CONTOUR INTERVAL IS TWO FEET.
4. HORIZONTAL DATUM BASED ON PROJECT SITE GRID SYSTEM. SITE GRID COORDINATES CORRELATION TO STATE PLANE COORDINATES DERIVED AS FOLLOWS:

SITE GRID COORDINATES  
CONTROL MONUMENT F-1  
40000 N =  
40000 E =

STATE PLANE  
COORDINATES  
587,357.8087 N  
1,713,516.1229 E

THE ANGULAR ROTATION FROM STATE PLANE BEARINGS TO SITE GRID BEARINGS IS 359°-13'-23" RIGHT WITH CONTROL POINT F-1 AS THE BASE POINT.

5. MINE FACILITIES DESIGN BY FORD, BACON & DAVIS, INCORPORATED, SALT LAKE CITY, UTAH AND PINCOCK, ALLEN & HOLT, INCORPORATED, LAKEWOOD, COLORADO.

## LEGEND

- 1100 EXISTING CONTOUR
- EXISTING PAVED ROADWAY
- EXISTING TRAIL/GRAVEL SURFACE
- TREES AND/OR BRUSH
- FENCE
- F-1 CONTROL MONUMENT
- WETLANDS



5c DISTURBED WETLAND AREAS  
REFERENCED IN EIR REPORT  
APPENDIX 3.8-C

0 300' 600'  
SCALE

## FOTH &amp; VAN DYKE

GEOSCIENCES & ENVIRONMENTAL MANAGEMENT DIVISION  
GREEN BAY, WISCONSIN

FLAMBEAU PROJECT  
LADYSMITH, WISCONSIN

KENNECOTT  
MINERALS  
COMPANY

155 MINERAL SQUARE  
SALT LAKE CITY, UTAH  
84102

NOTE: TOPSOIL STOCKPILE CONFIGURATION HAS BEEN  
REVISED (SEE FIGURE NO. 1). REVISION DOES NOT  
AFFECT ANY WETLAND AREAS.

FIGURE NO. 5  
DISTURBED WETLAND AREAS

| MICROFILM            | JOB           |
|----------------------|---------------|
| DRAWING NO.          | REV.          |
| DIVISION DRAWING NO. |               |
| SCALE                | SEE BAR SCALE |

REFERENCES

| DWG. NO. | DESCRIPTION |
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| DWG. NO. | DESCRIPTION |
|----------|-------------|
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| NO. | DATE | REVISIONS |
|-----|------|-----------|
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|     |      |           |
|     |      |           |

| BY | CHK'D | ENGR | ENGR |
|----|-------|------|------|
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| NO. | DATE | REVISIONS |
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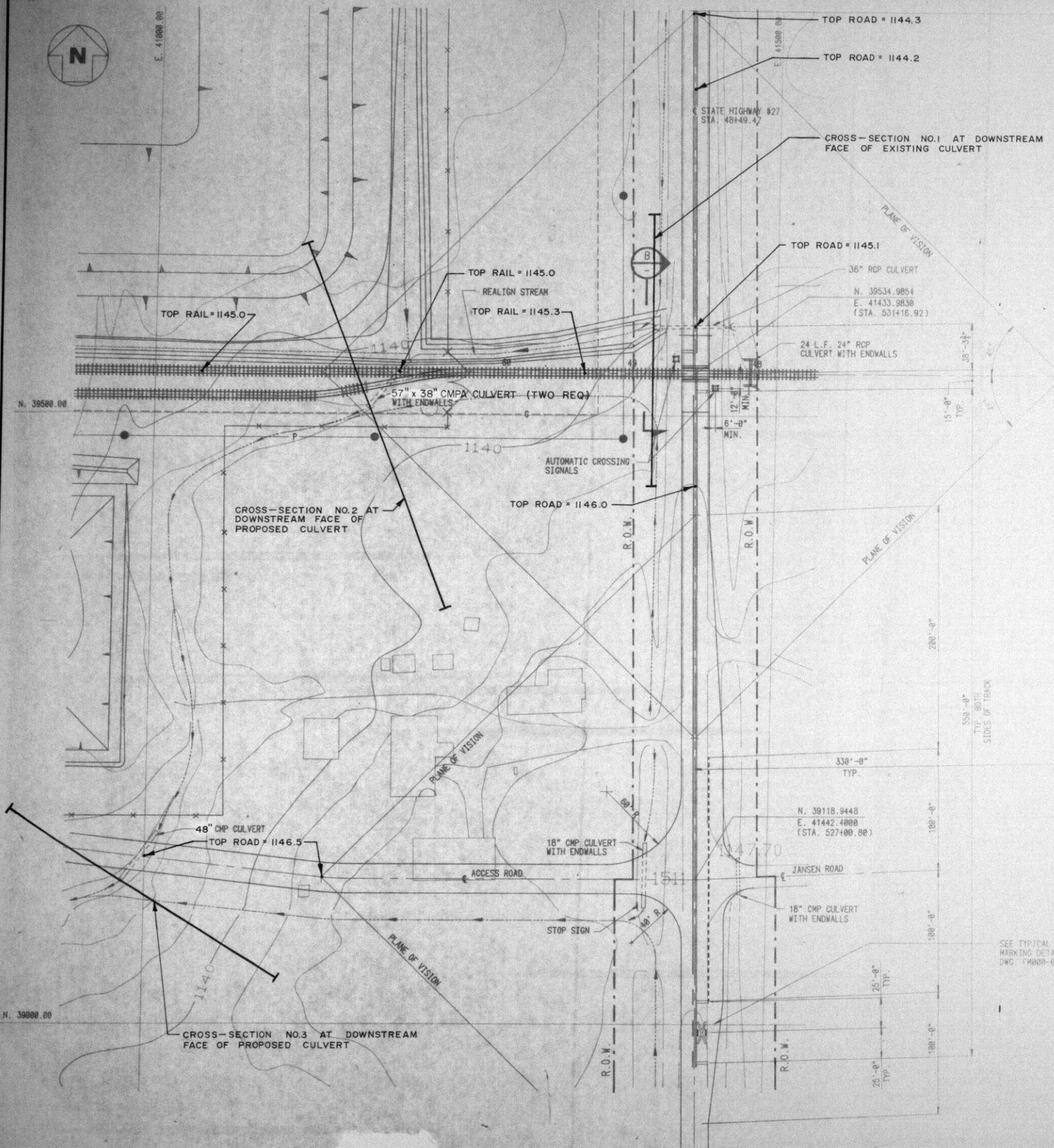
| DESIGN     | BY  | DATE    |
|------------|-----|---------|
| DRAWN      | SJL | FEB. 89 |
| CHK'D      | GWS | MAR. 89 |
| DES. ENGR  |     |         |
| SECT. ENGR |     |         |

| DESIGN     | BY  | DATE    |
|------------|-----|---------|
| DRAWN      | SJL | FEB. 89 |
| CHK'D      | GWS | MAR. 89 |
| DES. ENGR  |     |         |
| SECT. ENGR |     |         |







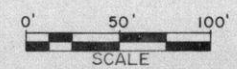


- LEGEND**
- 1140 EXISTING CONTOUR
  - ROADWAY
  - CULVERT
  - DRAINAGE SWALE
  - FENCE

- NOTES:**
- SITE LOCATION: SECTIONS 9, 10, 15 & 16, T34N, R6W, RUSK COUNTY, WISCONSIN.
  - TOPOGRAPHIC BASE MAP PREPARED FROM AERIAL SURVEY BY SURDEX CORPORATION, CHESTERFIELD, MISSOURI. DATE OF PHOTOGRAPHY - APRIL 24, 1970. ROADS, TREES AND BUILDINGS WERE UPDATED AS PER AERIAL PHOTOGRAPH TAKEN BY MARKHURD CORPORATION, MINNEAPOLIS, MINNESOTA. DATE OF PHOTOGRAPHY - SEPTEMBER 14, 1987.
  - ELEVATIONS BASED ON MEAN SEA LEVEL DATUM. CONTOUR INTERVAL IS TWO FEET.
  - HORIZONTAL DATUM BASED ON PROJECT SITE GRID SYSTEM. SITE GRID COORDINATES CORRELATION TO STATE PLANE COORDINATES DERIVED AS FOLLOWS:  

| SITE GRID COORDINATES |                  | STATE PLANE COORDINATES |  |
|-----------------------|------------------|-------------------------|--|
| CONTROL MONUMENT F-1  |                  |                         |  |
| 40000 N =             | 587,357.8087 N   |                         |  |
| 40000 E =             | 1,713,516.1229 E |                         |  |

THE ANGULAR ROTATION FROM STATE PLANE BEARINGS TO SITE GRID BEARINGS IS 359°-13'-23" RIGHT WITH CONTROL POINT F-1 AS THE BASE POINT.
  - MINE FACILITIES DESIGN BY FORD, BACON & DAVIS, INCORPORATED, SALT LAKE CITY, UTAH AND PINCOCK, ALLEN & HOLT, INCORPORATED, LAKEWOOD, COLORADO.



|                                                                                                       |  |  |  |  |  |  |  |  |  |                                                                                 |  |  |  |  |  |  |  |  |  |                                                                |  |               |  |
|-------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|---------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|----------------------------------------------------------------|--|---------------|--|
| <b>FOTH &amp; VAN DYKE</b><br>GEOSCIENCES & ENVIRONMENTAL MANAGEMENT DIVISION<br>GREEN BAY, WISCONSIN |  |  |  |  |  |  |  |  |  | <b>FLAMBEAU PROJECT</b><br>LADYSMITH, WISCONSIN                                 |  |  |  |  |  |  |  |  |  | MICROFILM                                                      |  | JOB           |  |
|                                                                                                       |  |  |  |  |  |  |  |  |  |                                                                                 |  |  |  |  |  |  |  |  |  | DRAWING NO.                                                    |  | REV. 1        |  |
|                                                                                                       |  |  |  |  |  |  |  |  |  |                                                                                 |  |  |  |  |  |  |  |  |  | DIVISION DRAWING NO.                                           |  |               |  |
|                                                                                                       |  |  |  |  |  |  |  |  |  | KENNECOTT MINERALS COMPANY<br>1515 MINERAL SQUARE<br>SALT LAKE CITY, UTAH 84112 |  |  |  |  |  |  |  |  |  | FIGURE NO. 12<br>SECTION LOCATIONS<br>AND STREAM C REALIGNMENT |  |               |  |
|                                                                                                       |  |  |  |  |  |  |  |  |  |                                                                                 |  |  |  |  |  |  |  |  |  | SCALE                                                          |  | SEE BAR SCALE |  |

| NO | DATE | REVISIONS | BY | CHKD | ENGR | ENGR | ENGR | BY | DATE | DESIGN       | BY | DATE |
|----|------|-----------|----|------|------|------|------|----|------|--------------|----|------|
|    |      |           |    |      |      |      |      |    |      | PROJ. ENGR   |    |      |
|    |      |           |    |      |      |      |      |    |      | MGR. PROCESS |    |      |
|    |      |           |    |      |      |      |      |    |      | ENGR         |    |      |
|    |      |           |    |      |      |      |      |    |      | ENGR. MGR    |    |      |
|    |      |           |    |      |      |      |      |    |      | DES. ENGR    |    |      |
|    |      |           |    |      |      |      |      |    |      | SECT. ENGR   |    |      |



37000 E

38000 E

39000 E

40000 E

41000 E

42000 E

43000 E

44000 E

45000 E



## NOTES:

1. SITE LOCATION: SECTIONS 9, 10, 15 & 16, T34N, R6W, RUSK COUNTY, WISCONSIN.
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SITE GRID COORDINATES  
CONTROL MONUMENT F-1  
40000 N =  
40000 E =  
STATE PLANE COORDINATES  
587,357.8087 N  
1,713,516.1229 E  
THE ANGULAR ROTATION FROM STATE PLANE BEARINGS TO SITE GRID BEARINGS IS 359°13'-23" RIGHT WITH CONTROL POINT F-1 AS THE BASE POINT.

## LEGEND

- 1100 — EXISTING CONTOUR  
— — — — — EXISTING PAVED ROADWAY  
- - - - - EXISTING TRAIL/GRAVEL SURFACE  
[TREES AND/OR BRUSH] TREES AND/OR BRUSH  
[FENCE] FENCE  
[CONTROL MONUMENT] CONTROL MONUMENT  
[PRIVATE WELL LOCATION] PRIVATE WELL LOCATION

A  
B  
C  
D

- --- --- APPROXIMATE BOUNDARY BETWEEN GEOMORPHIC SURFACES  
[UPLAND SURFACE] UPLAND SURFACE  
[DISSECTED TERRACE] DISSECTED TERRACE  
[PITTED GLACIAL-FLUVIAL SURFACE] PITTED GLACIAL-FLUVIAL SURFACE  
[RIVER LOWLAND] RIVER LOWLAND

## NOTE:

THIS DRAWING SHOWS ONLY THE PRIVATE WELLS THAT ARE BETWEEN 1200 AND 1300' FROM THE PROPOSED LIMITS OF WASTE PLACEMENT. ALL OTHER PRIVATE WELLS ARE LOCATED AT A DISTANCE GREATER THAN 1300' FROM THE PROPOSED LIMITS OF WASTE PLACEMENT.

0 300' 600'  
SCALE

## FOTH &amp; VAN DYKE

GEOSCIENCES & ENVIRONMENTAL MANAGEMENT DIVISION  
GREEN BAY, WISCONSIN

FLAMBEAU PROJECT  
LADYSMITH, WISCONSIN

KENNECOTT  
MINERALS  
COMPANY

155 MINERAL SQUARE  
SALT LAKE CITY, UTAH  
8412

FIGURE NO. 3-1  
ONE TIME DISPOSAL  
SITE LOCATION

MICROFILM JOB  
DRAWING NO. REV.  
DIVISION DRAWING NO.  
SCALE SEE BAR SCALE

REFERENCES

| DWG. NO. | DESCRIPTION |
|----------|-------------|
|          |             |

| DWG. NO. | DESCRIPTION |
|----------|-------------|
|          |             |

| NO. | DATE | REVISIONS |
|-----|------|-----------|
|     |      |           |

| BY | CHK'D | ENGR | ENGR | NO. | DATE | REVISIONS |
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|    |       |      |      |     |      |           |

| BY | CHK'D | ENGR | ENGR | NO. | DATE | REVISIONS |
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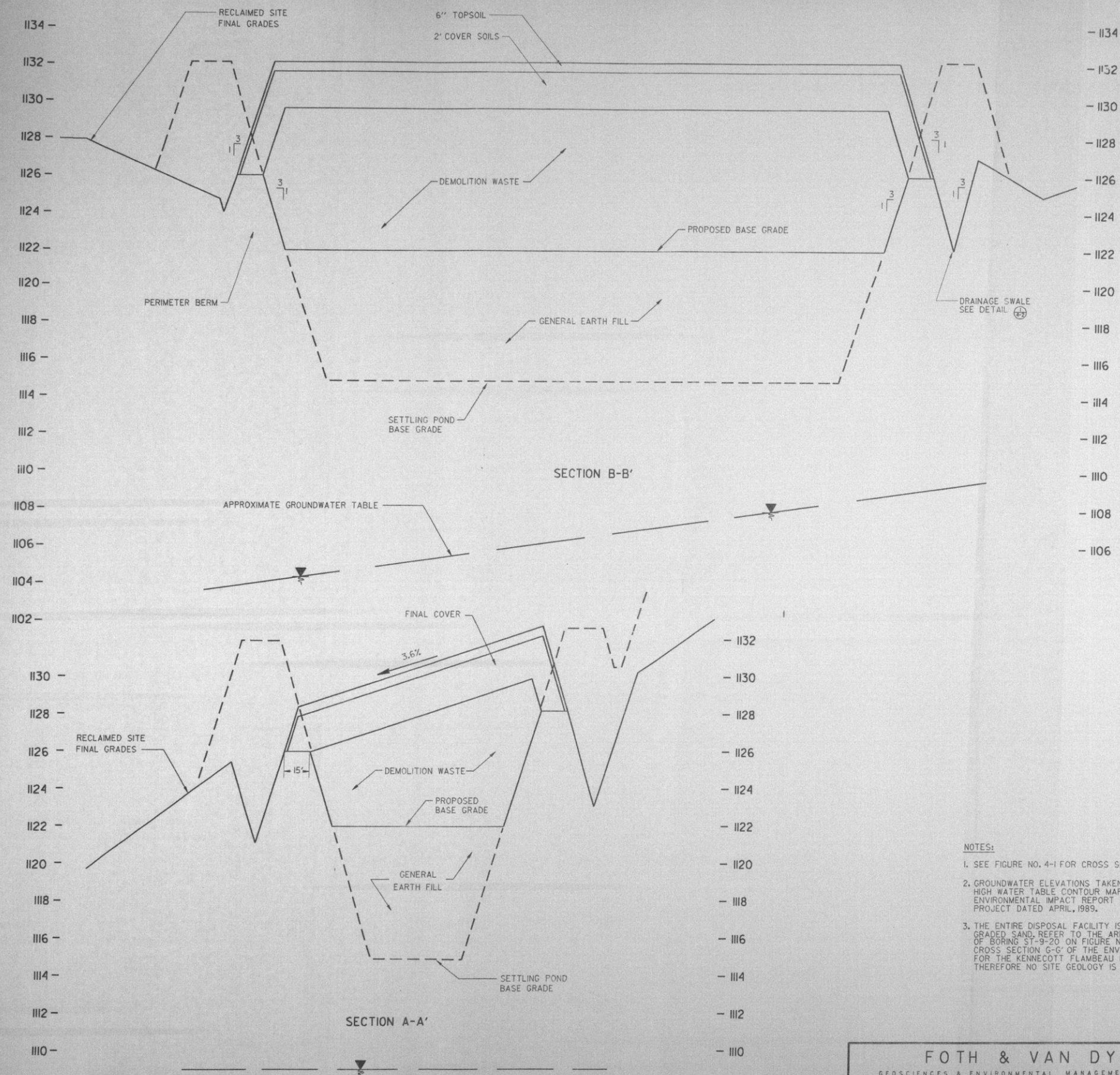
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|    |      |    |      |

| BY | DATE |
|----|------|
|    |      |









1  
4-2

TYPICAL DRAINAGE SWALE DETAIL

NOT TO SCALE

NOTES:

1. SEE FIGURE NO. 4-I FOR CROSS SECTION LOCATIONS.
2. GROUNDWATER ELEVATIONS TAKEN FROM FIGURE NO. 3.6-4 HIGH WATER TABLE CONTOUR MAP APRIL 6, 1988 OF THE ENVIRONMENTAL IMPACT REPORT FOR THE KENNECOTT FLAMBEAU PROJECT DATED APRIL, 1989.
3. THE ENTIRE DISPOSAL FACILITY IS LOCATED IN A WELL GRADED SAND REFER TO AREA 220' TO THE NORTHEAST OF THE SAND PIT AREA NO. 1.9-9 REGIONAL GEOLOGIC CROSS SECTION G-G' OF THE ENVIRONMENTAL IMPACT REPORT FOR THE KENNECOTT FLAMBEAU PROJECT DATED APRIL, 1989. THEREFORE NO SITE GEOLOGY IS SHOWN ON THIS DRAWING.

FOTH & VAN DYKE  
GEOSCIENCES & ENVIRONMENTAL MANAGEMENT DIVISION  
GREEN BAY, WISCONSIN

FLAMBEAU PROJECT  
LADYSMITH, WISCONSIN

KENNECOTT  
MINERALS  
COMPANY

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